THE INTELLIGIBILITY OF NIGERIAN ENGLISH

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ABSTRACT

The aim of this investigation was to measure the intelligibility of educated Nigerian speakers of English to British listeners and to analyse the main causes of intelligibility failure. The test material consisted of the following: I - Connected Speech, II - Reading Passage, III - Phonemes, IVA - Stress, IVB - Intonation. The speech of 24 Nigerian first-year university students - 12 Yoruba and 12 Hausa speakers - was recorded. An RP speaker was also recorded. The recordings were played to 240 British listeners, each Nigerian speaker being assessed by 10 British listeners.

A scoring system was devised for the tests of Connected Speech. The intelligibility scores ranged from 92.7% to 29.9%, with a mean score of 64.4%. The RP speaker's score (based on all 240 listeners) was 99.4%. Listeners' impressionistic judgements of the speakers' intelligibility correlated closely with the scores obtained on Test I. The most intelligible Nigerian speaker was 93% as efficient as the RP speaker, the mean Nigerian speaker was 65% as efficient, and the least intelligible Nigerian speaker 30% as efficient as the RP speaker.

Test I - Connected Speech - was taken as the criterion of fundamental importance in assessing intelligibility. The other tests were regarded as subsidiary. It was found that Connected Speech was significantly correlated with Reading and Stress, but not with the tests of Phonemes and Intonation. Partial correlation analyses showed that stress is the major component of all aspects of intelligibility.

The errors leading to intelligibility failure were categorised into four groupings: rhythmic/stress, segmental, phonotactic, lexical/syntactic. Rhythmic/stress errors (38.2% for all speakers) were the major cause of intelligibility failure. This was closely followed by segmental errors (33.0%). Phonotactic errors (20.0%) were of lesser importance, while lexical/syntactic errors (8.8%) were of minor importance. Details of the actual phonetic errors are summarised in Chapters 11-13. The study concludes with some observations on the testing and teaching of oral English in the light of these findings.

Acknowledgements

I am greatly indebted to many individuals and institutions for the help which made this study possible. It was begun in 1968 when I was working at the Institute of Education, Ahmadu Bello University, Zaria on secondment from the British Council. I am grateful to the students who volunteered to take part and to the staff of the Institute of Education and the Department of English for their encouragement and for the facilities and equipment they provided.

The study was continued full-time at the Department of Phonetics, University College, London during 1968-70. I wish to express my gratitude to Professor A. C. Gimson, my supervisor, for his constant willingness to advise and for his many other kindnesses. I am also grateful to Mr. Adrian Smith of the Department of Statistics, University College for his help with the statistical analysis shown in Chapter 9. I am indebted, too, to the Department of Education and Science for awarding me a Major State Studentship for the 1969/70 session. I have found Dr. R. K. Bansal's thesis on the intelligibility of Indian English a valuable source of ideas and I have adopted or adapted a number of them. Finally, I wish to thank the large number of people - over 240 of them - who were prepared to give up their time to listen to my tapes.

Over the last four years this thesis was written up during my stay in Malawi. Throughout this time Professor Gimson continued to give me support and advice, for which I am extremely grateful. I am also indebted to the British Council for assistance with the final production of the thesis. Mrs. A. Wilson typed the final draft and I am very grateful to her for her patient and skilled help.

Finally, I must express my great debt to my wife, Mary. Without her encouragement this thesis would never have been completed.

Any faults of presentation or errors of fact or opinion are, of course, entirely my own responsibility.

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Brian Tiffen

List of Phonetic Symbols and Signs

i	front, close, unrounded vowel
I	centralised front unrounded vowel, between close and half close
e	front, half-close, unrounded vowel
ɛ	front, half-open, unrounded vowel
æ	front unrounded vowel, between half-open and open
a	front, open, unrounded vowel; sometimes centralised
ɑ	back, open, unrounded vowel
ɒ	back, open, rounded vowel
ɔ	back, half-open, rounded vowel
ʌ	central, half-open, unrounded vowel
o	back, half-close, rounded vowel
ʊ	centralised back rounded vowel, between half-close and close
u	back, close rounded vowel
ə	unsounded central vowel
ɜ	unrounded central vowel
p	voiceless bilabial plosive
b	voiced bilabial plosive
t	voiceless alveolar plosive
d	voiced alveolar plosive
k	voiceless velar plosive
g	voiced velar plosive
ʔ	glottal stop
tʃ	voiceless palato-alveolar affricate
d_3	voiced palato-alveolar affricate
β	voiced bilabial fricative
f	voiceless labio-dental fricative
v	voiced labio-dental fricative
θ	voiceless dental fricative
ð	voiced dental fricative
s	voiceless alveolar fricative
z	voiced alveolar fricative
ʃ	voiceless palato-alveolar fricative
ʒ	voiced palato-alveolar fricative
h	glottal fricative
m	voiced bilabial nasal
n	voiced alveolar nasal

ŋ	voiced velar nasal
l	voiced alveolar lateral continuant
r	voiced post-alveolar frictionless continuant; also voiced alveolar tap in broad transcription
ɾ	voiced alveolar tap (narrow transcription)
j	voiced unrounded palatal semi-vowel
w	voiced labio-velar semi-vowel
ʋ	voiced labio-dental frictionless continuant
h	aspiration
:	indicates full length of preceding vowel
~	nasalisation
¨	centralised vowel
̣	closer quality of vowel
̩	more open quality of vowel
̪	dental articulation
ˈ	main accentual stress in word; stressed, high pitch accented syllable with following stressed syllables relatively lower
ˌ	stressed, low pitch accented syllable
˩	high falling nuclear syllable
˨	low falling nuclear syllable
˧	high rising nuclear syllable
˨˧	low rising nuclear syllable
˄ or ∧	rise-fall nuclear syllable
↘	stressed high pitch non-nuclear syllable, with following unstressed syllables descending
↗	stressed low pitch non-nuclear syllable, with following unstressed syllables ascending
¯	high, level pre-head
[ ]	phonetic transcription
/ /	phonemic transcription
/	pause or end of tone group

Additional phonemic symbols relating to Yoruba and Hausa are explained in Chapter 2.

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CHAPTER 1

Spoken English in Africa

1.1 The background

During the last few years the problem of the standard of spoken English in Commonwealth Africa has received considerable attention. Because of the multiplicity of African languages, estimated at almost a thousand (Rice 1961:4), English has become the lingua franca over large parts of the continent. Spoken as a mother tongue by only a tiny minority of Africans, English is now used as a second language by millions. For this reason it is important that the type of English used should keep within certain norms, if speakers are to be mutually intelligible. If English should become so distorted - and there is some evidence that this is already happening - as to become incomprehensible both within and without Africa, one of the main purposes for which it has been learnt will have been thwarted.

English fulfils two main functions. First, it is the language of internal communication, the language of government, the law, much of the national press and other mass media, large scale business and, above all, the medium of education at all levels above the lowest classes in the primary school. In addition, English is often the language of national unity.

The second major function of English is as a vehicle of external communication. On the personal level a Ghanaian will almost certainly use English to speak to a Kenyan, and at the state level it is (with French) the means by which Africa can participate in the world of international affairs, commerce and modern scientific, technological and artistic developments.

There are many different types of English spoken in Africa, ranging from the pidgin of the market place to the speech of the highly educated. It is with the educated speaker that we are concerned in the present investigation, for it is he who needs most both to understand the speech of

other educated users of English and to speak a brand of English that is intelligible to others. The recordings, on which this study is based, were made by two groups of Nigerian first year undergraduates, whose studies bring them into daily contact with many different speakers of the English language - Nigerians and other Africans, British, Americans, Indians, as well as users of English from various countries in Europe. The needs of these undergraduates, then, require them to have near-bilingual proficiency in their handling of English. This investigation attempts to measure the intelligibility of the Nigerian undergraduates' speech to British listeners and to pinpoint the main causes of intelligibility failure in educated Nigerian English.

1.2 Dialect and accent

Before discussing varieties of English in Africa, it would be as well to consider terms such as 'English', 'language', 'dialect' and 'accent'. Language can be considered as a series of particular speech signals used by a particular community. People who use the same system of speech signals form a speech-community. All people who use English as a mother tongue belong to the same speech-community. This does not mean, however, that all these speakers are mutually intelligible, as a conversation between Appalachian and Yorkshire miners would undoubtedly show. So it is necessary to break down the concept of language still further.

The first concept to consider is that of idiolect. "Generally speaking, the totality of speech habits of a single person at a given time consitutes an idiolect" (Hockett 1958:321). A collection of more or less similar idiolects constitutes a dialect and a collection of more or less similar dialects constitutes a language. The difference between a dialect of a language and a language is that "the degree of similarity of the idiolects in a single dialect is presumed to be greater than that of all the idiolects in a language" (Hockett 1958:321).

There is the further distinction to be made between dialect and accent. If two varieties of English differ in

patterns of grammar and vocabulary, they can be considered different dialects; if their grammar and vocabulary are more or less the same, but they differ in sound patterns they are the same dialect, but different accents (Strevens 1965:80). The type of English used by educated speakers of English all over the world can be considered as one dialect, normally known as Standard English; it is spoken with a variety of accents, Scottish, American, Jamaican, New Zealand etc.

One accent in England, which does not belong to any particular region, and which is considered to have certain social and educational advantages is Received Pronunciation or RP for short. This is the accent which most English language teaching textbooks describe, although it is not, of course, the only 'correct' form of English pronunciation. In Africa the model for teaching purposes as far as grammar and vocabulary are concerned has always been Standard English; RP has usually been the model of pronunciation, although it is probable that this is becoming less generally true.

1.3 Varieties of English in Africa

Up to now, when discussing dialect and accent, we have been primarily concerned with English as a mother tongue. In Africa the position is different. English is hardly anyone's mother tongue. The type of English spoken by Africans will be considerably influenced by the sound systems of the many African languages. This is one contributory factor towards local pronunciation. The other is the influence of well established local norms of pronunciation which cut across straightforward linguistic contrastive analyses. How do different accents arise?

Weinreich has pointed out that it is language-using individuals who provide the point of contact between two languages. Thus it is not so much languages that are in contact as individual bilingual speakers. This gives rise to 'interference' defined as "those instances of deviation from the norms of either language which occur in the speech of bilinguals as a result of their familiarity with more than

one language, i.e. as a result of language contact" (1953:1). Interference may affect the bulk of the phonemic system, much of the morphology and syntax and some areas of the vocabulary, e.g. kinship, colour, weather etc.

But in considering the position in Africa, Greenberg has suggested that there may be a greater uniformity in the English of African speakers than would be theoretically expected:

> .....The similarities among African languages on the basis of common origin and the areal spread of phonetic, grammatical and semantic features.... are such that over very wide areas African speakers will find at least roughly similar points of difficulty.....Thus most Africans speak tonal, non-stress languages. They will probably all tend to identify stress with high pitch and not to reduce unstressed vowels to the same extent as native English speakers. Finally, many Africans first encounter European languages and continue to hear them mainly from African speakers and tend naturally enough to use such African renditions as a model. What seems to be arising, then, are reasonably uniform "dialects" of English and French, which are practically no one's first language, very much as there exists an "Indian English". This dialect or group of dialects exhibits, in all probability, less interference from first languages than would be predicted from the model of individual transfer grammars (1964:174-5).

Two studies, based on widely separated parts of Africa, appear to bear out Greenberg's contention, at least as far as contiguous regions are concerned. Lanham, investigating Bantu African English, reports as follows:

> Among the significant discoveries made.....was the fact that, irrespective of mother-tongue background, African English in southern Africa..... is uniform to a high degree. It has been standardized and institutionalised in African schools and, in its own way, is systematic and self-perpetuating (1963:157).

In West Africa, Strevens found three broad categories of pronunciation:

> There are differences of detail at the local level,

> but broadly speaking those pronunciations spoken in Northern Nigeria, Northern Ghana and Sierra Leone form one type; the pronunciation of English in the southern part of Nigeria and the southern part of Ghana forms another; that of Freetown... .....forms a third (1965:112).

Although there are broad similarities, then, at the regional level, these similarities do not always seem to enable English to be easily understood throughout the whole continent of Africa. For, as we shall see, there are reports of difficulties of comprehension between the speakers of one part of Africa and another.

1.4 The problem of standards

There is growing concern about the problem of standards of English in Africa. As Guthrie has pointed out (1964:107-8), one of the characteristics of English overseas, for example in Africa, is that it can operate in a cultural void and hence local varieties can arise with their own canons of correctness. This is in contrast to French over-seas, which remains closely linked to French culture and which is less tolerant towards regional variations. This being the case, it is possible to anticipate divergences from the norm in English-speaking Africa which may make mutual intelligibility difficult and eventually impossible. There is some evidence from Zambia that this is already happening. Richardson writes:

> As English-speaking Africans in Northern Rhodesia appear to have much less difficulty in understanding each other than an Englishman has in understanding them, it would appear that a Northern Rhodesian Standard English for Africans has arisen which differs in many ways from United Kingdom Standard English. The fact that several varieties of African English are spoken throughout Africa is borne out by statements by Northern Rhodesian African students in London that, while they can easily understand the English of East African students, the variety spoken by West Africans tends to be incomprehensible to them (1964:194).

Lanham, too, reports that African teachers in South Africa could understand "only an occasional word or phrase" of recordings of Liberian English (1963:163). Thus, in spite of the uniformity of much of the English spoken within, say, Southern Africa or West Africa, divergences are arising which militate against the use of English as a vehicle of external communication outside these areas.

Hitherto we have considered English from a geographical point of view, on a horizontal axis, as it were. There are also different varieties of English in Africa which can be considered from a vertical point of view. Here one finds different accents and, indeed, different dialects of English based to some extent, although not exclusively, on the educational attainments of the speaker. Thus the types of English used in Sierra Leone have been assessed by Berry as follows:

(i) Standard English spoken chiefly by expatriates.

(ii) A regional dialect, Sierra Leone Modified English, which may be identical with and closely approximating to West African English. Spoken by middle class Sierra Leonians.

(iii) Krio: an English-based Creole spoken as a mother tongue by 20,000-30,000 inhabitants in and around Freetown.

(iv) West African pidgin English, spoken as a second language.

(v) Marginal languages spoken between expatriates and (e.g.) their servants (1964:221).

West African English, listed under (ii), needs further comment. It is both a dialect, in that grammatical and lexical divergences from Standard English will be found, and also an accent, or, rather, a series of overlapping accents, in that it is peculiar to West Africa. With the exception of (iii), Krio, a similar situation to that described by Berry is to be found in Nigeria. The Nigerian undergraduates used in the present investigation are representative of educated speakers whose type of English lies along a cline

between (i) and (ii). Dialect-wise their speech ranges from what might be called Educated Nigerian towards Standard English; accent-wise it ranges between Educated Nigerian towards an approximation of RP. All have a Nigerian accent which varies to some extent according to the speaker's mother tongue. But there are some features of Nigerian speech which appear to be uniform throughout large parts of the country irrespective of the mother tongue.

Reverting to the problem of standards in West Africa, one frequently hears comments that the standard of spoken English is 'going down'. Various reasons are suggested for this: the low standard of primary school teachers' English; a large increase in the number of secondary schools with a consequent dilution of the quality of the teachers and pupils; fewer expatriate teachers who hitherto had provided a native speaker's model of pronunciation; an unfavourable linguistic environment due to the influence of pidgin and sub-standard forms of English. However, in his report on Oral English testing in West Africa, Davies concluded that although there is a strong conviction among teachers and others that the standard of spoken English is worsening, there was no real evidence for this and that in any case it was difficult to prove objectively (1968:165).

Turning more specifically to Nigeria, a recent Ford Foundation Survey on English Language Teaching in Nigeria pointed out that although there is a lack of comprehensive information on the quality of spoken English in Nigeria, one criterion is success at Credit Level in the Oral English examination of the West African School Certificate. The Report concludes:

> While no general downward trend is shown in these data, the fact that there is a problem with spoken English is implied in observing that at no time did over half of the examinees taking the oral exam receive passing credits. This is particularly significant in view of the fact that oral English has never been a compulsory examination and that those who have taken this examination in the past undoubtedly represent a select sub-set of the population possessing somewhat better than average English language skills (1966:44).

These observations and those of many others engaged in educational work in Nigeria lead one to conclude that there is a problem in the quality of spoken English. This brings us on to the problem of a model for teaching purposes.

1.5 A model of pronunciation

There are widely differing opinions on the goal of pronunciation teaching. Three points of view have been summarised by Lado which illustrate these opinions. First, that pronunciation is unimportant and that learning a language implies a mastery of vocabulary, grammar, reading, writing, and speaking it with the sounds of the learner's mother tongue. The second view is that nothing short of a native pronunciation is acceptable. And in between these two extremes is the view that 'intelligibility' should be the criterion for determining the standard of pronunciation (1961:39).

Setting these contrasting views against the Nigerian background, it would seem that all three are open to objection. The first - using the sound system of the speaker's mother tongue - means that this type of English would be understood internally only, and even then there may be communication difficulties between speakers with widely differing mother tongues, such as Hausa and Yoruba. It would certainly mean that this type of spoken English would be largely unintelligible to native speakers or other foreign speakers of English.

The goal of native speaker perfection is unrealistic. Young children transferred to an English speaking environment could attain it. But English is first taught in Nigerian primary schools by teachers whose own pronunciation is generally inaccurate. This, together with well established local pronunciations of varying degrees of 'correctness', is enough to ensure that few Nigerian pupils will ever achieve native speaker perfection. A few adults do achieve it, by conscious effort, but run the risk of being considered affected and un-Nigerian.

The third view-point, that 'intelligibility' should be the criterion for pronunciation purposes, looks attractive

at first sight but, on examination, has its shortcomings. Abercrombie, for example, suggests that the goal should be "a comfortably intelligible pronunciation", i.e. one that can be understood with little or no conscious effort on the part of the listener.

> For this limited goal, then, it must first be decided which features of English pronunciation are important for intelligibility (this will depend on the phonetic structure of English); secondly it must be decided which of those features will require the learner's attention (this will depend on the phonetic structure of the learner's mother tongue) (1956:38).

He goes on to say that by means of this contrastive analysis important phonemic distinctions, carefully graded, and an emphasis on the patterns of English rhythm, are all that can be reasonably attempted in a language teaching programme in a foreign or second language situation. This comes close to Lado's view, who holds that phonemics is the way out of the problem and that the aim of the foreign language student should be to hear and produce the major phonemic contrasts of English (1961:39-40).

Turning to the Nigerian situation, the problem arises as to what we mean by 'intelligible'. What standards should we aim at? What model should be copied? Is there a Nigerian standard or even a West African standard of spoken English? Davies found that it was mainly expatriate teachers who favoured a West African standard:

> Africans were very much more in favour of retaining RP as the standard to aim at. The writer was led to believe that this attitude was much more prevalent in Ghana among Africans than in Nigeria; this was just not so among those he met. In the main Africans in both countries were in agreement (1968:166).

While, as we have seen, very few Nigerian speakers do, or in the circumstances can, speak English with an RP accent, the question of a teaching model is of crucial importance. Nigerians, as Davies indicated, prefer to keep

RP as a model. Prator in discussing the education problems involved in teaching English as a second language suggests other possibilities:

> Should the model be Received Pronunciation because of its "greater prestige"? Should it be General American, because of its"wider use"? Is it conceivable that an international pronunciation could be developed, aimed at wide intelligibility but unlike any existing model (1964:76)?

The difficulty with this last proposition is to find teachers capable of teaching it. And is it a practicable proposition considering that it is nobody's English accent? However, Prator also warns against the dangers of English in Africa becoming distorted further and further away from acceptable models:-

> In order to avoid setting up a spiral of progressively less accurate imitations of imitations, it seems essential to provide in the classroom opportunities for hearing the L 2 spoken with native accuracy (1964:73).

This appears to be a realistic view. The model of English in Nigerian primary schools will always be mainly that of the Nigerian teacher, aided where possible by native speaker models on tape or radio, and by British, American and other teachers at secondary and higher levels of education. If, in the context of real life situation, a Nigerian form of English will inevitably serve as a model, what criteria should be used to determine what variety of English is acceptable? Halliday, McIntosh and Strevens suggest:

> First, it must be a variety actually used by a reasonably large body of the population, in particular by a proportion of those whose level of education makes them in other respects desirable models..... Second, it must be mutually intelligible with other varieties of English used by similar professional and educated groups in other countries (1964:296).

This would imply keeping as close as possible to the grammar and lexis of Standard English and maintaining close approximations to the phonological systems of other educated English accents. That this norm is already coming to be accepted is shown by a statement in the latest West African Examinations Council School Certificate English Language syllabus for 1970. Entitled "A Note on Standards" it reads:

> In any test of continuous writing, and in objective tests of lexis and structure the Examiners will be assessing the candidates' mastery of Standard English, as currently used by educated African writers and speakers of English in Commonwealth West Africa (1970:77).

In the realm of grammar and lexis, then, the norm adopted is Standard English with locally acceptable variations. In the realm of pronunciation or accent similar guidance cannot be given. The Oral English syllabus simply states:

> The object is to test the candidate's ability to speak and to understand English (1970:81).

The syllabus goes on to say that candidates should be able to recognise and produce all the significant sound contrasts in the consonantal and vowel system of English; to produce and recognise initial and final consonant clusters; to contrast stressed and unstressed syllables in words which are not otherwise distinguished; to be aware of the nature of English sentence stress and emphatic stress; and to be aware that there are a number of intonation patterns regularly used for particular types of grammatical utterances.

The reason, of course, why no norms of pronunciation are given in this syllabus is simply because no-one can be sure what these norms are. Detailed descriptions of Educated West African or Educated Nigerian English still remain to be done. Nobody knows how intelligible the speech of educated Nigerians is to other speakers of English.

1.6 The need for research

Many conferences and reports have drawn attention to the problems outlined above. A few examples of these recommendations are listed here. The Commonwealth Conference on the Teaching of English as a Second Language recommended increased research in the field of contemporary English and of varieties of restricted English, regional, occupational etc. (1961).

The Brazzaville Conference on Multilingualism reported:

> As there is some evidence that regional forms of world languages exist in Africa, the Symposium recommends that detailed studies be made of the emergence of such forms (1964:34).

Davies in his report on Oral English Testing in West Africa on the question of research into intelligibility and a West African Standard writes:-

> 'Such research.....is supremely necessary because without it the teaching of Spoken English must remain based on RP (for want of any other model) and therefore both unrealistic and inappropriate. At the same time no valid Test of Production can be designed until it is clear what the demands of intelligibility are .....(1968:173).

This is echoed in the Ford Foundation Survey on English Language Teaching in Nigeria. Discussing the development of a standard form of Nigerian English, the writers point out that while it will obviously not be RP, it is not quite so obvious as to what it <u>will</u> be. Research is needed to provide answers to the following questions:-

(a) What are the varieties of English spoken in Nigeria at the present time?

(b) In what way do they differ from
   1. each other?
   2. other varieties of English spoken in West Africa?

3. varieties of English spoken by native speakers of English?

(c) How intelligible are these varieties to
1. other Nigerian speakers of English?
2. West African speakers of English?
3. native speakers of English?
4. and vice versa?

(d) What level (or levels) of intelligibility would be acceptable for a language which would be understood (1) throughout Nigeria, (2) throughout West Africa, and (3) throughout the international English-speaking community? (1966:92-3).

These points need investigating if spoken English is to be taught and learnt more effectively in Nigeria. The present thesis is an attempt to begin answering some of the questions posed above.

CHAPTER 2

The Nigerian Language Background and Descriptions of Nigerian English

2.1 Nigerian languages

The exact number of distinct languages spoken in Nigeria is unknown. Estimates vary from 150 (Denny 1963:44) to 248 (Coleman 1958:15). However, Yoruba and Hausa are two of the major languages and together the number of speakers of these two languages represents about half the population of Nigeria. Bamgbose estimates that there are about 12 million speakers of Yoruba, although this includes a relatively small number of speakers outside Nigeria (1966:2). Perhaps 10-11 million Yoruba speakers in Nigeria would be a reasonable estimate. Kirk-Greene, basing his figures on the somewhat disputed 1963 census figures, estimates that there are possibly 20 million people in Nigeria who speak Hausa as a first or second language, of which about 15.5 million are mother tongue speakers (1967:84-9).

Yoruba is the principal language of the Western, Lagos and Kwara States of Nigeria, as well as being spoken to some extent in Dahomey and Togo. Hausa is widely used as a mother tongue and as a lingua franca not only in many of the Northern States of Nigeria, but also in the Niger Republic, Ghana, Togo and many other areas. Indeed, Hausa may be regarded as the lingua franca of West Africa.

Greenberg classifies African languages into

four major groupings: Congo-Kordofanian, Nilo-Saharan, Afro-Asiatic and Khoisan. In the first grouping, the Niger-Congo family is by far the most important and it is here, in the Kwa genetic sub-family, that Yoruba is placed. The Kwa group also contains other important Nigerian languages, e.g. Igala, Nupe, Bini, Idoma, Ibo and Ijo. Hausa, on the other hand, belongs to one of the other of Greenberg's major groupings, Afro-Asiatic, and is placed in the Chad family, which also contains a number of other minor Nigerian languages (1966).

Thus, Yoruba and Hausa, the mother tongues of the English speakers in the present investigation, are a particularly suitable choice. Together their speakers represent about half the population of Nigeria; the two languages come from widely separated families, and hence illustrate two major types of Nigerian English; by being related to other Nigerian languages the intelligibility problems they reveal are likely to be representative of speakers of other languages related to Yoruba or Hausa.

2.2 The phonology of Yoruba*

2.2.1 Vowels

There are 7 oral and 4 nasalised vowels in Yoruba, as shown overleaf:

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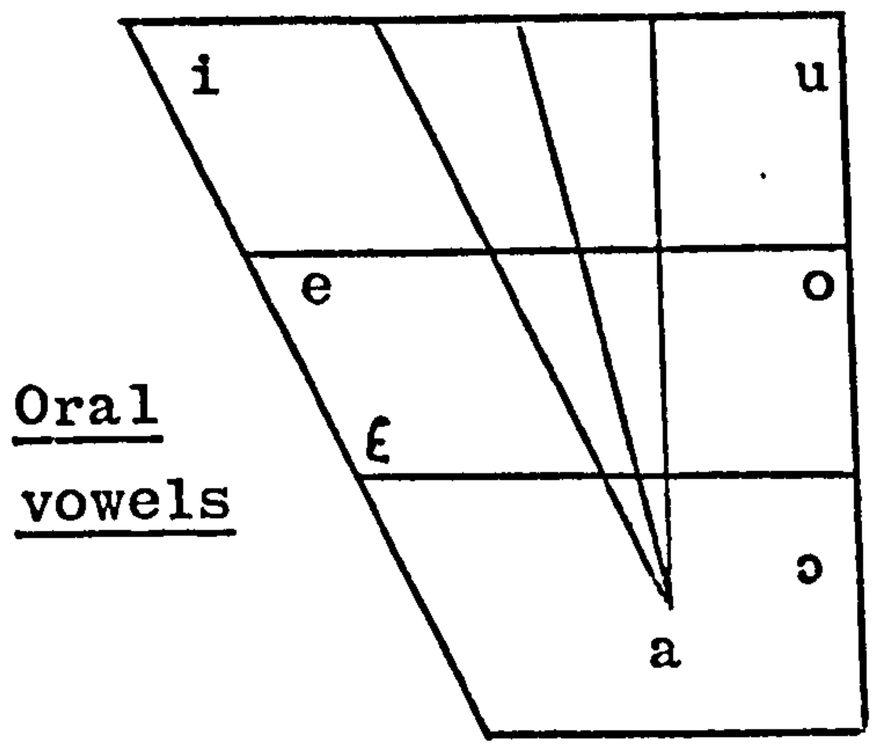
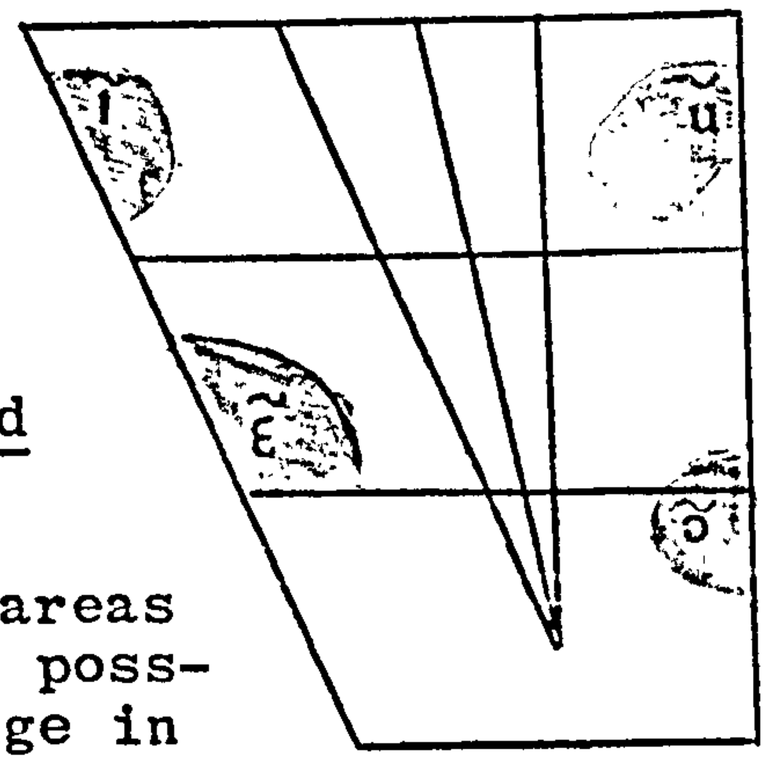
* In this section I am indebted to Bamgbose (1969:163-72).



Oral vowels



Nasalised vowels

(shaded areas indicate possible range in quality)

It will be seen that with the exception of /ɔ/ and /a/, the remaining Yoruba oral vowels are all at or near the Cardinal Vowels. Equivalents to RP/ɪ/ and /ʊ/ are lacking. There are no front/back vowel distinctions corresponding to RP/æ/ and /ɑ:/. Central vowels /ʌ/, /ɜ:/ and /ə/ do not occur in Yoruba. There is also no correspondence to the RP distinctions between /ɒ/ and /ɔ:/. Long vowels occur in Yoruba but have no phonemic status. They occur in compound tones or pitch glides.

In Yoruba all vowels except /e/ and /o/ are nasalised after /m/. Some speakers replace /ɔ̃/ by /ã/; others use both sounds under certain phonetic conditions. In Yoruba orthography nasalised vowels are usually indicated by a vowel + 'n', which sometimes causes speakers to carry over this convention into English. Thus 'dance' may be pronounced /dã:s/.

There are no diphthongs in Yoruba, although the sequences /ai/ and /au/ occur, but equivalents to RP /eɪ/ and /ɑʊ/ do not. Centring diphthongs have no equivalent in Yoruba.

2.2.2 Consonants

The Yoruba consonant system is as follows:

	Bilabial	Labio-dental	Alveolar	Palato-alveolar	Palatal	Velar	Labio-velar	Glottal
Plosive	b		t d			k g	kp gb	
Fricative		f	s	ʃ				h
Affricate				dʒ (1)				
Nasal	m		[n] (2)					
Tap			ɾ					
Lateral			l					
Semi-vowel	w					j (3)		

(1) In many speakers this is replaced by a voiced palatal plosive [ɟ].

(2) /n/ is an allophone of /l/, occurring in front of nasalised vowels.

(3) In many speakers this is a voiced palatal fricative sound.

The following RP consonant sounds do not occur in Yoruba:

Plosives /p/
Affricates /tʃ/
Fricatives/v/, /θ/, /ð/, /z/, /ʒ/
Nasals /ŋ/ is not a separate phoneme, but an allophone of /m/.

2.2.3 Syllable structure

The two possible syllable structures are CV and V; a syllable cannot end in a consonant. There is also a syllabic nasal /m/, which has various allophonic realisations. There are no consonant clusters in Yoruba.

2.2.4 Tones

Yoruba has three level tones, marked in the orthography as shown:

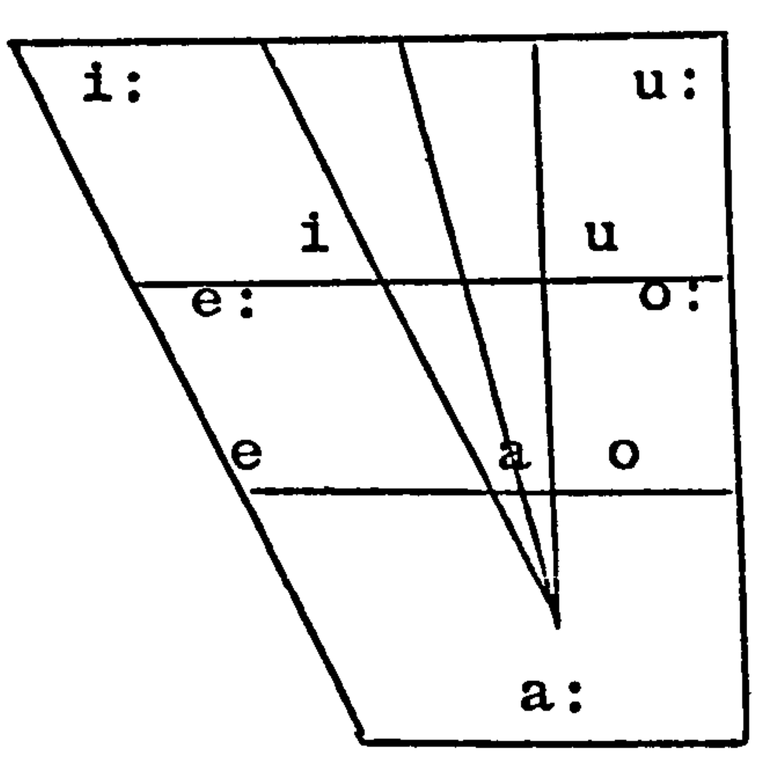
high ´ mid (unmarked) low `

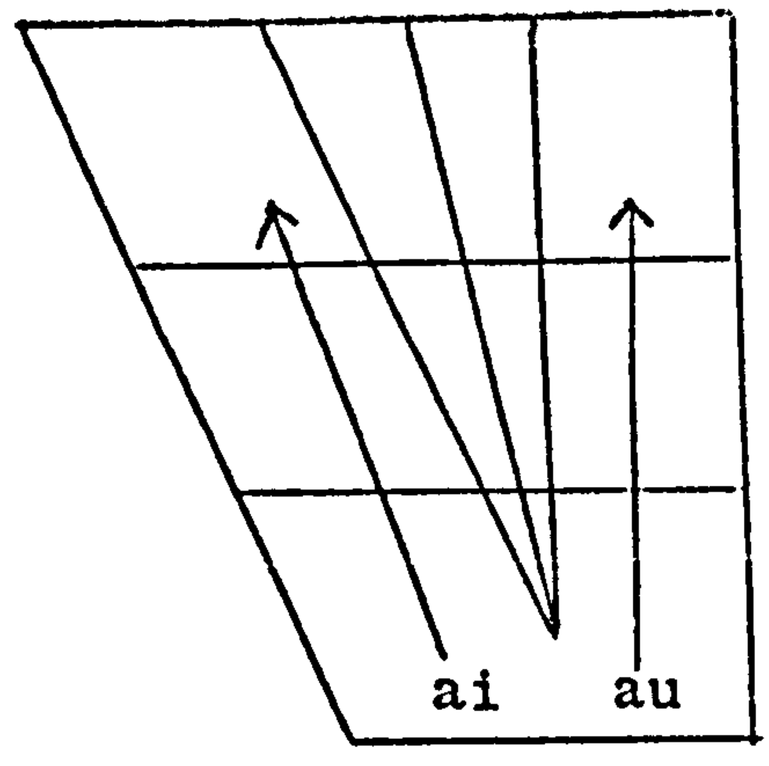
There is also a low-high rise in a step-up between a low tone V and a high tone V .

2.3 The phonology of Hausa*

2.3.1 Vowels

There are 10 vowels and 2 diphthongs in Hausa as shown below:





Although Hausa has both /i:/ and /i/, Hausa /i:/ does not occur in syllables closed by a consonant. There are no front/back vowel distinctions corresponding to RP /æ/ and /ɑ:/. Central vowels /ə/ and /ɜ:/ do not occur, although Hausa /a/ is fairly close to the RP equivalents. Hausa /e/ is mid-way between RP /e/ and /æ/, so that these distinctions are difficult for Hausa speakers. RP /ɒ/ does not occur in Hausa.

Although the diphthongs /ai/ and /au/ occur in Hausa, RP equivalents such as /eI/ and /ɔɪ/do not. Centring diphthongs also have no equivalent in Hausa.

In Hausa if a word begins with a vowel it is always preceded by a glottal stop.

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* In this section I am indebted to Hoffmann and Schachter (1969: 73-84).

2.3.2 Consonants

The Hausa consonant system is as follows:

	Bilabial	Labio-dental	Alveolar	Retroflex	Palato-alveolar	Palatal	Palatalised Velar	Velar	Labialised Velar	Glottal	Palatalised Glottal
Plosive	b		t d				kj gj	k g	kw gw	ʔ	ʔj
Glottalised Plosive	ɓ		ɗ				ƙj	ƙ	ƙw		
Fricative		f (1)	s z		ʃ					h	
Glottalised Fricative			sʔ (2)								
Affricate					tʃ dʒ						
Nasal	m		n					[ŋ] (3)			
Flap/tap			ɾ	ɽ							
Lateral			l								
Semi-vowel	w					j					

(1) Some speakers use [p] in place of, or in alternation with [f].

(2) Some speakers use a glottalised alveolar affricate [tsʔ] in place of, or in alternation with [sʔ].

(3) [ŋ] is an allophone of /n/ before velars and glottals and usually in syllable-final position.

The following RP consonant sounds do not occur in Hausa:

Plosives /p/ is not used in many dialects of Hausa.
Fricatives /v/, /θ/, /ð/, /ʒ/
Nasals /ŋ/ is not a separate phoneme, but an allophone of /n/.

It will also be seen that there are a considerable number of palatalised and labialised consonants in Hausa. These are often carried over into English.

2.3.3 Syllable structure

The two possible syllable structures are CV and less commonly CVC (final C usually being /n/ or /ɾ/. Only

short vowels occur in CVC syllables. There is also a syllabic nasal /n/ (initial C always being /ʔ/). Consonant clusters occur only in the middle of words, and consist of a final C of one syllable plus the initial C of the next.

2.3.4 Tones

Hausa has three tones: high, low and falling. They are not marked in the orthography.

2.4 Descriptions of Nigerian English

2.4.1 General characteristics

Mention has already been made of three broad categories of pronunciation occurring in West Africa. Strevens (1965:112-6) found that they all had the following common characteristics:

(a) A smaller number of vowels and diphthongs than are used in RP. /I/, /ɑ:/, /ʌ/, /ʊ/, /ɜ:/, /eI/, /əʊ/, /ɛə/ are almost entirely absent;

(b) absence of distinctions of vowel length;

(c) except in Freetown, lack of distinction between /s/ and /z/;

(d) lack of palatal affricate /dʒ/ and the voiced and voiceless dental fricatives /ð/ and /θ/;

(e) absence (except Freetown) of independent systems of word stress, sentence stress and intonation, and their replacement by tonal features of the mother tongue;

(f) the presence of very large numbers of spelling pronunciations.

These characteristics are to be found in his Type 1 pronunciation, which includes Hausa English. In his Type 2 pronunciation, which includes Yoruba English, the following additional features were found:

(a) Nasalisation of vowels. Vowels and diphthongs preceding a nasal consonant are almost invariably nasalised. Sometimes the

consonant is omitted altogether, e.g. dancing > [dazĩ].

(b) Assimilation is very common, especially voiceless consonants which become voiced under the influence of a following voiced sound, e.g. RP /vɔIslIs/> [vɔizlez].

(c) Elision of a word final consonant frequently occurs especially with consonant clusters, e.g. desks> [dɛs] , or at word boundaries, e.g. don't cry.

(d) Personal pronouns are accompanied by a high tone, e.g. The man who was there.

However, Strevens also found a type of English, which he calls 'Educated West African', which differs from the Types 1 and 2 outlined above in the following ways:

(a) Distinctions of vowel length are made;

(b) /s/ and /z/ are kept distinct;

(c) a system of sentence stress and intonation of the same general nature as RP is used (1965:121).

2.4.2 Yoruba English

Two studies of Yoruba English have recently been made, by Schafer (1967) and Afolayan (1968). Schafer examined the speech of 13 pupils in their final year at primary school, within 50 miles of Ibadan. The stimulus for the children was a word list of about 2,000 items. The words were grouped according to topic and were illustrated by sets of pictures, a colour chart, lists of tables, initials and opposites. The corpus represented children's "careful" pronunciation, but at the same time it may be assumed that as the subjects were primary school children their pronunciation probably reflects a pure form of Yoruba English, uninfluenced by native speakers such as might be found with secondary school pupils and undergraduates. In a section headed "Main features of the Yoruba English 'accent' noticed by native speakers" the following summary appears:

1. Twelve 'pure' vowels of RP are reduced to five, so that rich/reach, had/hard/heard, hut/hot/hurt/ought, full/fool are regularly homophones. The Yoruba half close vowels /e,o/ replace RP diphthongs /eI,əʊ/, and /Iə,ɛə/ distinctions are not maintained.

2. Vowels are nasalised before /n, m,ŋ /, or a nasalised vowel only occurs. Prevocalic /w,r,j/ may also be nasalised.

3. /ə/ as a neutral is replaced by an accented vowel, usually that which occurs in the spelling, centring diphthongs have a second element in /a/ and 'triphthongs' may become disyllabic or reduced to monophthongs. Stress is rather 'added to accented syllables' without corresponding weakening of unaccented vowels, or the accented vowel of RP may be given a high tone. The loss of familiar accentual patterns is always noted by native speakers.

4. The distribution of /tʃ , ʃ, dʒ , ʒ, s/ is erratic, although all the sounds occur. Shop/chop, church/judge, wash/was, police/polish may or may not be homophones.

5. Consonant clusters may be hypercorrected or simplified in difficult sequences to produce either unidentifiable words such as [kɛ-ʃɔ̃] question, or new clusters such as [sret] straight. Re-structuring of syllables has the same effect on dark red [da-krɛd], success [sɔ-ksɛs].

6. Substitutions or neutralisations of voiced/voiceless oppositions among plosives and fricatives may affect distinctions between wig/week, paws/purse, save/safe, etc. /θ, ð/ may be replaced by /t, d/.

7. /l/ is always 'clear', and syllabic /l/ may occur as a sequence /ul/ or /u/ may be substituted.

8. /h/ occurs variably as an onset before all word - initial vowels but may be omitted where it occurs in RP: hill, heel, ill may or may not be homophones.

9. Spelling frequently influences pronunciation, and consonants may be inserted in comb, king, half, etc.

10. Yoruba syllable structure may be imposed on

words such as <u>society</u> [sɔ-sai-ɛ-ti], <u>missionary</u> [mi-si-ɔ-na-ri].

11. Elisions occur where they do not in RP, as in <u>believe</u>, <u>animal</u>.

12. Vowel harmony affects /ɛ,e/ slightly and /ɔ ,o/ more noticeably (1967:13-14).

Afolayan was primarily concerned with interference problems at the lexical and grammatical level, but he has some interesting remarks to make on the phonology of Yoruba and its effect on Yoruba English. His comments on tone, stress and intonation will be dealt with in Section 2 . 8. Here we shall confine ourselves primarily to the phonemic and syllabic level. Afolayan considers the problems from the point of view of 'deep features' and 'surface realisations'. Deep features are features in English or Yoruba not paralleled in the other language, while surface realisations refer to features common to both (1968:631).

At the 'deep' level there are two major problems:

(a) Centrality in English is absent in Yoruba; Yoruba speakers therefore have problems with the English central vowels /ʌ, ɜ:, ə /.

(b) Nasalisation is a contrastive or distinctive feature in Yoruba but not in English; hence 'tin' > /tĩn/, 'soon' > /sũn/.

At the 'surface' level Afolayan contrasts the way the two languages expound different oppositions from the point of view of frontness/backness, openness/closeness, long vowel versus short vowel (long vowels in Yoruba have no phonemic status), monophthongs versus diphthongs, the different plosive systems, frication/plosive oppositions and use of the 'clear' /l/ only by the Yoruba speaker of English.

At the syllabic level consonant clusters are differently constructed and distributed in the two languages. In Yoruba clustering only occurs at syllable boundaries, made up of two elements, the first being a nasal, e.g.

òrombó 'orange', bankì 'bank'. Other problems likely to occur are due to the lack of inaudible plosive release in Yoruba, e.g. 'lamp-post'> [lamp post]; lack of nasal plosion, e.g. 'button'> [bɔtĩ(n)], 'happen' > [hapũ(n)]; and lack of lateral plosion, e.g. 'little'> [litu].

Afolayan considers that although the surface realisations outnumber the deep features, it is the deep features that are more fundamental to the international intelligibility of Yoruba speakers of English.

2.4.3 Hausa English

A very thorough study (1961, 1965) of the influence of Hausa phonology on Hausa English has been made by Nuttall, whose main conclusions are as follows:

1. Vowels

The main problem for Hausa speakers lies in the occurrence in English of long vowels and diphthongs in closed syllables. This is not possible in Hausa and results in:

(a) Lack of contrast between long and short vowels. Short vowels usually replace long vowels in closed syllables, and occasionally in open syllables. Surprisingly, long vowels sometimes replace short vowels, even in closed syllables.

(b) Lack of distinction in quality. Hausa English speakers have problems not only with length, but also with quality. Hausa short /a/ has a large number of variants. These are confused with the phonemically distinct English vowels /e/, /æ/, /ɒ/, /ʌ/, /ɜ:/ and /ə/. The most frequently confused are /e/ and /æ/, /æ/ and /ʌ/, /ʌ/ and /ɜ:/. The central vowel /ɜ:/ is a major problem, while /ə/ is often given a spelling pronunciation. English /ɔ:/ is frequently shortened to /ɒ/ and is sometimes confused with /ɑ:/. Unlike Yoruba English, /ʌ/ and /ɒ/ are seldom confused.

2. Diphthongs

English /əʊ/ may be confused with /ɑʊ/ or reduced to /ɔ:/. Also /aI/ and /eI/ may be confused, and /eI/ generally is identified with

Hausa /e:/. The centring diphthong /ɛə/ is also often reduced to Hausa /e:/ or is confused with /Iə/.

Triphthongs such as /aIə/ or /ɑʊə/ often have strong [j] or [w] glides, but this does not cause much difficulty.

3. Consonants

Most English consonants present little difficulty in themselves. /ð/ and /θ/ are usually realised as /z/ and /s/ or, to a lesser extent, /d/ and /t/ as Yoruba speakers do.

There is confusion between labial stops and fricatives. /p/ and /f/ are often not kept distinct; /b/ and /v/ are similarly confused. /dʒ/ is usually substituted for /ʒ/.

Hausas use a clear /l/ throughout and often a rolled /r/, but neither of these constitute intelligibility problems.

4. Syllabic structure

There are two main problems here: closed syllables and consonant clusters.

(a) Closed syllables occur frequently in English, but are infrequent in Hausa. As a result even single consonants may be omitted in final position. If they are retained, the following contrasts may be lacking: voiced/voiceless contrast, e.g. tend/tent; contrast between nasals /n,ŋ/ e.g. been/being; contrast between fricatives and affricates, e.g. wish/which or between plosives and fricatives, e.g. reap/reef. The words off/of/up/or are often almost indistinguishable. In other cases final consonants may be retained and followed by an intrusive vowel.

(b) Consonant clusters frequently occur in English in initial and final positions but are absent in Hausa. Even medial clusters can present difficulties. English initial clusters are usually solved by retaining the consonants and inserting an intrusive vowel between them (e.g. the loan word direba 'driver'). Final consonant clusters are often reduced to a single consonant, which affects many important grammatical markers indicating e.g. tense, singular/plural differences, verb concord (talked, girls, likes).

In connected speech more clusters are formed by the juxtaposition of word final and word initial consonants and clusters.

5. Word Links

The English linking /r/ is usually replaced by a glottal stop. /w/ and /j/ glides are usually used correctly, but other glides prove difficult, and are replaced by a glottal stop or elision. Thus the other becomes [ðə ʔʌðə] or [ðʌðə] .

6. Labialisation and palatisation of velars

This Hausa feature is carried over into English. A/w/-glide occurs when /k, g/ are followed by a rounded back vowel, so that e.g. cod and quad become indistinguishable. Less serious is the /j/-glide when /k, g/ are followed by a front vowel as in can, keen.

In conclusion it should perhaps be stated here that there is in the Emirates of the Northern States of Nigeria, a tradition of English pronunciation of a very high standard, mainly among the generation who attended Katsina College in the 1920s and 30s. The students here were small in number and highly selected, taught by a dedicated group of predominantly British teachers who placed great emphasis on spoken English. The products of this college now occupy positions of considerable authority and their English almost certainly serves as a model for many younger Nigerians from the Northern States. However, the conditions which produced this élite of beautifully spoken Northerners are not likely to be reproduced in the present circumstances. Nevertheless, the high standard of spoken English of many educated people in the Hausa States is still apparent to any visitor to Nigeria today.

2.5 Spelling pronunciation and pronunciation spelling

One characteristic of Nigerian English already mentioned lies in the prevalence of spelling pronunciations. Thus mother may be pronounced [mɔθa], listen [listen], climb [klaimb], etc. A vowel before a nasal generally becomes nasalised in Yoruba English. Thus Henry is pronounced [hɛ̃ri], pen [pẽ(h)] - a carry-over from the conventions of Yoruba orthography.

In contrast to spelling pronunciation (where

pronunciation follows the spelling) there is another characteristic which is often a good indication of pronunciation problems. This may be termed pronunciation spelling (where spelling follows the pronunciation). Thus the examiners in the University of London G.C.E. examination, referring to Nigerian students, write:

> Bad pronunciation led to such spellings as order (other), efford (effort), all works (walks) of life, a match - (march-) past, leave (live), mordern/morden/mordden, etc. (modern), reach (rich), prices (prizes), and communnal/communial (communal) (1961:33).

And in a further report from the examiners we read:

> Bad pronunciation caused such mis-spellings as naughty for knotty, pools for pulls and lacking for lagging ('The women of my country were not lacking behind') (1962:47).

The two quotations above reveal two major problems: inability to distinguish length and quality in English vowels, and confusion of voiced and voiceless consonants in medial or final positions.

2.6 Phonology of loan words

The way words from one language are assimilated into a foreign language is another useful means of comparing the sound and syllabic structure of the two languages. The borrowing of English words by Yoruba and Hausa illustrates this. Rowlands (1963:208-14), discussing English loan words in Yoruba, distinguishes between thoroughly assimilated words used by all Yoruba, monoglot and bilingual, and unassimilated words used by bilingual speakers. The latter type, usually spoken by the educated - what Rowlands calls a 'class dialect' - need not detain us here except to say that the words are usually pronounced in a similar way to the educated Yoruba speaker's normal pronunciation of English. The first type, that is, the completely assimilated words, is of interest in

that interference problems are highlighted. Rowlands gives examples of these, e.g.:

> títì - street; búrẹ̀dì - bread; bọ́ọ̀lù - ball;
> háyà - hire; fẹ́ẹ̀lì - to fail in an examination.

and comments:

> In such words consonant clusters are either reduced to one consonant, as in títì, or a vowel is interposed, as in búrèdì. A final consonant is either dropped, as in sílè 'shilling' or a vowel - i or u according to the timbre of the preceding sounds - is added to it, as in títì, bóòlù (1963:209).

In addition, English stress patterns are reinterpreted as Yoruba tone patterns, the usual pattern being a high followed by a low tone or tones, as in the examples, títì, háyà, bóòlù above.

Turning to Hausa, it will be seen that similar phonological changes take place to conform with the sound system of the mother tongue. Parsons has indicated some of the major changes, which may be summarised as follows:

(a) The seven RP short vowels are reduced to only two or three, often accompanied by other features such as palatalisation or labio-velarisation of preceding consonants, e.g. kyaftin 'captain', gwamna 'governor'.

(b) RP long vowels are not possible in closed syllables, which leads to reductions and modifications, e.g. fas 'pass', kwal 'coal', rasit 'receipt'.

(c) Many diphthongs are disyllabically resolved, e.g. waya 'wire', layi 'line', inshuwara 'insurance'.

(d) /p/>[f] or [h]; /v/>[b] or [f] e.g. fasinja 'passenger', bawul, 'valve .

(e) Initial consonant clusters are often resolved by the insertion of intrusive vowels, e.g. direba 'driver', burodi 'bread'; difficult medial clusters are simplified in various ways; 'r' clusters are often metathesised, e.g. birki 'brick'; final dark 'l' becomes -ir/ -ur, e.g. kyandir 'candle', tebur table';

words ending in a consonant often have a final vowel added, e.g. sule 'shilling', sitati 'starch'.

(f) Unstressed syllables are often elided, e.g. lantarki 'electricity', samanja 'sergeant-major'; sequences of similar sounding syllables are reduced to one, e.g. janar 'general', kofur 'corporal'.

(g) English stressed patterns are, as in Yoruba, integrated into the tonal system, stress being associated with high tone (1964:201).

Parsons also makes the interesting comment that some English words, because of their phonological shape, must have come into Hausa through Yoruba or at least through Yoruba speakers, e.g. bos 'bus', kulob 'club'. The word kwano 'pan', shows a progressive sound shift, viz. English /p/ > Yoruba /kp/ > Hausa /kw/ (1964:199).

In many ways English words undergo very similar changes when assimilated into Yoruba or Hausa. In both languages English stress is interpreted in terms of high tone; difficulties are revealed in the treatment of English vowel quality and length, and in the handling of diphthongs; consonant clusters in all positions are either simplified, or eliminated by the insertion of intrusive vowels; unstressed syllables are often elided or reduced. These examples illustrate some of the major difficulties both Yoruba and Hausa speakers have with the English phonological system.

2.7 Assimilation in Nigerian English

An investigation into the type of assimilation made by educated Southern Nigerian speakers of English, including Yorubas, has been made by Laver, who found that irrespective of the mother tongue the same type of assimilations were made - an indication of the existence of an institutionalised form of Nigerian English.

He found that some words commonly assimilated in RP, e.g. newspaper /njʊspeɪpə/, good morning /gʊm, gʊb/ were very rarely assimilated in educated Nigerian English. On

the other hand, Nigerian speakers used assimilations that would not occur in RP, e.g. jazz singer [dʒas siŋga], live coal [laif kol].

Assimilations in Nigerian English are in nearly all cases regressive; they never involve manner of articulation alone; and there is no progressive assimilation of voice. Like RP, alveolar consonants are the most susceptible to assimilation. Nigerian English, unlike RP but like educated Scots, permits regressive assimilation of voice, e.g. make them [meg dɛm].

Some of Laver's other examples are shown below:

[nɔ p pɔsibʌl]	Regressive - place	not possible
[kam bait]	" "	can bite
[toldʒu]	Progressive - place	told you
[gʊt taim]	Regressive - voicelessness	good time
[wɔs tɔl]	" "	was tall
[blagbɛ:d]	" - voice	blackbird
[hiʃ ʃɛ:t]	" - place and voicelessness	his shirt
[big͡bɔi]	" - place and manner	big boy

On the whole, he found that the Southern Nigerian speakers made less use of assimilations than RP speakers, and that with the possible exception of regressive assimilation of voice none of the assimilations used seriously interfered with intelligibility (1968:156-60).

In Hausa assimilation is regressive. Nuttall found that in Hausa English, too, similar assimilations took place, mainly of voice and also involving nasals, liquids, and dental fricatives + alveolar stops or fricatives. On occasions such assimilations obscured word boundaries and hence intelligibility (1961:297-8).

2.8 Tone, stress and intonation

It must first of all be pointed out that tone, stress and intonation are all inter-related and that to treat them separately necessarily leads to an over-simplification of the problems involved. Nevertheless some sort of division, however arbitrary, does help to clarify certain characteristics of Nigerian English arising out of the differences between Nigerian languages and English.

First as to tone. Ward defines a tone language as "one which makes use of the pitch of the voice as an essential element in the formation of words and in connected speech" (1952:29). Referring to Yoruba, she says that tone shows itself in two ways: first, as part of the word's make-up, as much a part of the word as vowels and consonants are; and secondly, as a distinguishing mark of meaning, e.g.

bá (high tone) = meet
ba (mid tone) = hide
bà (low tone) = perch

In Hausa, too, tone also distinguishes the meaning of words, although to a lesser extent than Yoruba. There are, however, a number of examples, e.g.

wúyà (high + low tone) = neck
wùyá (low + high tone) = difficulty

As Abraham points out, tone is also used in Hausa for grammatical purposes, for example, to distinguish a transitive from an intransitive verb, or the subjunctive from the past (1959:182). Thus both languages are tonal, although Yoruba is much more obviously so. (Indeed it is only about 30 years ago that it was fully realised that Hausa was a tonal language). Certainly if a foreigner speaks Hausa using the wrong tones he is generally understood; if he tries to do the same with Yoruba he meets with blank incomprehension. Ward comments that the Yorubas are more conscious of the tones of their language than are the speakers of any other tone language she had ever investigated (1952:41).

Tone, then is geared to the word, each word having a fixed or relatively fixed tone pattern. Tone and stress, however, are closely connected. In Hausa high and falling tones are stressed, while low tones are unstressed, except in words all of whose syllables are low. In Yoruba all syllables are more or less equally stressed, but high tones appear to have more prominence and, to English ears at least, seem to bear some stress. Conversely, to Nigerian ears, stressed syllables in English are associated with high tone.

This is revealed in loan words taken into Hausa or Yoruba and also in the pitch patterns used in Nigerian English, particularly Yoruba English.

Both Yoruba and Hausa lack the sentence stress or rhythm of English, which is characterised by the alternation of stressed and unstressed syllables, with rhythmic beats occurring at fairly regular intervals of time, i.e. it is a stress-timed language. Yoruba, on the other hand, is a syllable-timed language, in that each syllable receives more or less equal stress and takes the same amount of time to utter. Hausa occupies perhaps an intermediate position between Yoruba and English. Certainly a larger proportion of syllables receive stress than in English, but at the same time unstressed syllables do occur on low tones and in longer words of more than two syllables. Reduced vowels also occur occasionally in Hausa. Consequently we can anticipate that Yoruba speakers will encounter more difficulty than Hausa speakers in coping with the rhythmic features of English. Neither group will find that English rhythm comes naturally, the large number of reduced vowels proving a special difficulty.

Let us consider some of the characteristics that emerge from the Nigerian speaker's imposition of different word stress and rhythmic patterns on English. In both Yoruba and Hausa English one finds misplacing of lexical stress and an absence of reduced vowels. Thus committee may become [ˈkɔmiti], normally [nɔˈmali]. As Nuttall points out (1961:276), occasionally one finds two primary stresses in place of one, or in place of one primary and one secondary stress. Thus somebody may become in Hausa English [ˈsʌmˈbɔdi], or, to take a Yoruba example, started becomes [ˈstaˈted].

Secondly, there is generally an absence of the typical stress-timed rhythm found in a native speaker's English. Many extra stressed syllables appear, particularly in Yoruba English. But in both Hausa and Yoruba English personal pronouns and auxiliary verbs are usually given their full marked forms and prepositions may be given full stress. One interesting carry-over from the Yoruba tonal system has been pointed out by Siertsema:

> In Yoruba.....the only relative word, ti, is always pronounced on a high tone - consequently a Yoruba is inclined to pronounce not only all the [English] relative pronouns with a high tone, but also the relative and conjunctional adverbs such as when and where (1959:9).

The effect of this, of course, is not only to disrupt the rhythm of the English sentence but also to give these words the semblance of undue stress because of the high tone that accompanies them.

Nuttall points out that contrastive stress is often wrongly handled in Hausa English (as it is in Yoruba English). In a sentence like `good boys and `bad boys the tendency for Nigerian speakers is to put a heavy stress on the contrasting element in one phrase and on the stable element in the other, resulting in `good boys and bad `boys (1961:279-80).

Emphatic stress is generally reasonably well handled by Hausa speakers, no doubt because of the occurrence in Hausa of a number of emphatic words accompanied by strong stress, e.g. ƙwarai 'very', duka 'all', can 'over there'. Yoruba speakers have more difficulty with this aspect of English stress.

Of course, stress patterns such as we have been discussing are intimately bound up with intonation. Tone in Yoruba and Hausa, which is geared to the word, obviously conflicts with the intonation contours of English, which are geared to the sentence and varied according to the attitude of the speaker. As Abraham puts it:

> In Hausa.....the word is the unit and is rigid in tone so that the sentences consist of a series of rigid units, the tones of each of which are fixed in advance and which cannot therefore be changed (like our 'good morning') to fit into an emotional tone-pattern (1959:182).

Yoruba and Hausa both have recognised intonation patterns for statements and questions, although, as yet, no detailed studies have been made of all the different contours found in these languages. In Hausa, (and to a much lesser extent in Yoruba) there is a gradual downdrift in the falling intonation pattern of statements, i.e. a high tone following

a low tone is lower than the preceding high tone and so on. Similarly a low tone following a high tone is lower than the preceding low tone. In yes/no questions there is no down-drift but final syllables are said on an extra-high pitch. Carnochan has shown that in Yoruba also some sentences are spoken with a higher range of pitches than others, for example, in questions as opposed to statements, while linked answers also show different pitch characteristics and there are regular tonal relations between subject and verb (1964:397-406).

How do the intonation patterns of Yoruba and Hausa and, in particular, the fixed tone patterns of words affect the type of English spoken by these two groups? Taking Yoruba speakers first, Afolayan points out that all the rhythmic features of English are absent in Yoruba English, which, he suggests, accounts for most of the unintelligibility of his speech. Also, the concept of placing the tonic accent on the most prominent word in the tone group is absent. In Yoruba English he finds none of the pre-tonic characteristics - low and high pre-heads, low, stepping and sliding heads - of a native speaker's English. The post-tonic realisations, too, are lacking. There is no tail in Yoruba English. (He also makes the observation that Yoruba speakers of English find the tail their most difficult decoding problem when listening to native English speakers.) (1968:632,638).

Nuttall found that Hausa English differed mainly in its treatment of unstressed syllables. In Hausa, as we have seen, low-toned syllables fall below the preceding high and the following high-toned syllables, giving it a tune consisting of a series of steps down and up. This is carried over into Hausa English. Consequently many of the pre-tonic and post-tonic elements of English are lacking in Hausa English as well (1961:280-8).

2.9 Summary

In this chapter an attempt has been made to bring together a considerable number of statements made about Yoruba and Hausa and about the type of English spoken by

these two groups of speakers. We have reviewed the phonemic systems of the two languages and indicated the main differences between them and English and considered accounts of Yoruba English made by Schafer and Afolayan and of Hausa English by Nuttall. The problems of spelling pronunciation, pronunciation spelling and loan words have helped to underline the difficulties experienced by Nigerian speakers of English. Assimilations made by Nigerians were not considered a bar to intelligibility by Laver, but Nuttall thought that on occasions this was the case. Tone, stress and intonation have been shown to be major difficulties, but that on balance, the Hausa language, at least in this area, presents less interference problems than Yoruba. However, both Yoruba and Hausa speakers have difficulty with English rhythm, vowel quality and quantity, a few consonants and most consonant clusters.

It is obvious that for the purposes of intelligibility, or rather, lack of intelligibility, that some of these problems are more crucial than others. In Chapter 10 a summary of the findings of this investigation indicate what the main priorities are. But in the meantime it is necessary to discuss the act of communication and the nature of intelligibility, and this the next chapter sets out to do.

CHAPTER 3

Communication and Intelligibility

3.1 Language and speech

Language, the basic means by which human beings communicate, has been defined as "a systematized code of arbitrary symbols, basically vocal, but reinforced by bodily activity" (Gray and Wise 1959:2). The symbols or speech sounds are arbitrary in that each language in theory has an unlimited number of sounds to choose from; it is systematized in that each language in practice selects only a limited number of the available sounds (44 phonemes in the case of RP English). Language is vocal because most communication takes place through the organs of speech, but gesture, facial expression, cries, touching etc. also play a part, either by reinforcing the sounds of speech or at times by replacing them completely.

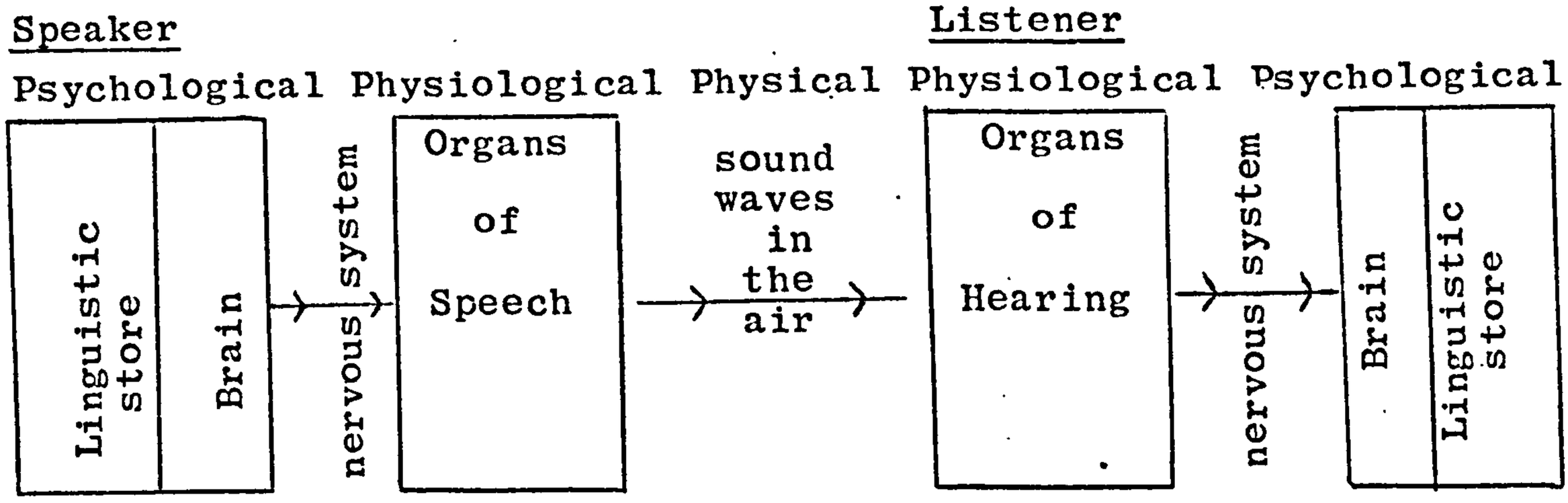
Language imposes certain constraints upon which the speaker draws when communicating with members of his own speech community. The meaningful speech sounds are limited in number, as we have seen, but there are other constraints - morphological, lexical and syntactic - as well as the shared understanding of the 'meaning' of words. Speaker and listener must be 'tuned in' to each other if real communication is to take place. Let us consider the stages involved in the typical communication cycle or speech chain.

3.2 The speech chain

The simplest case of communication takes place between two individuals. The speaker (or sender) conveys a message to the listener (or receiver). This is, as we have discussed, normally done through speech, although gesture and other bodily activities play a part. One individual may also speak to large members of people, either directly (e.g. public lecture) or indirectly (e.g. broadcast or tape recording). But true communication cannot exist unless there is a relationship between sender and receiver, between stimulus

and response. Miller, in discussing the question of 'feedback' in the act of communication distinguishes between 'primary' information (= message of the speaker) and 'secondary' information (= response of the listener) (1951:152). For a complete act of communication there must be a cycle. As Gray and Wise put it "If we speak to someone who gives no evidence of having heard, the act of communication has not been completed; we must have knowledge that he has heard and responded in some way" (1959:10). Communication, then, implies a listener or listeners.

When two people converse face to face, the main processes involved may be said to be psychological, physiological and physical (Gimson 1962:6). These processes are reversed in the case of the listener. The speech chain may be illustrated visually thus:



The listening stage is the most difficult to understand, but some consideration of it is essential to a discussion on intelligibility. Fry (1956:169-73) gives what is probably one of the clearest accounts of this process. He considers that the process of recognition takes place at different linguistic levels (not only at the phoneme or the sentence level, as some would maintain), that is, "the listener recognises sounds, morphemes, words and sentences at succeeding stages in the process of speech reception". He considers that there are two stages involved in recognition: 'primary recognition' (often called 'reception') based directly on physical input; and 'secondary recognition' (often called 'perception') whereby the listener can apply his knowledge of linguistic restraints and interpret the incoming sounds into meaningful linguistic forms.

Fry considers that there are four dimensions basic to auditory perception - quality, pitch, loudness and length. A change in quality is the most important factor, but pitch may also be crucial (in conjunction with quality) in tonal languages. Minimal changes in these four dimensions do not normally interfere with the intelligibility of the incoming sounds. The listener can accommodate various accents, intonations and voice qualities and assign them to the correct linguistic categories. Only when gross distortion or 'noise' is present to a large extent does the listener find it impossible to receive sufficient cues from his 'primary recognition' to enable him to draw upon his linguistic store and carry out the second stage. Then communication breaks down: the speaker's utterance is no longer intelligible.

But Fry points out that before this stage is reached the listener carries out a number of self-correcting devices which enable him to check and re-check the information he is receiving. After the initial sequence of phonemes has been received (classified according to the phonemic structure of the language being used) the listener sorts out these sounds into an ascending hierarchy of morphemes, words and sentences. Information is fed back to previous levels "so that the higher order constraints can always over-ride recognitions and correct errors made at a lower level". Thus, if a speaker says 'I'll sink about it', information from the morpheme level corrects the previous identification of the phoneme /s/ into 'think'. This checking can, of course, be continued at the level of the word or the sentence in other contexts.

It will be seen, therefore, that listening is a very complicated process. Two further points should perhaps be mentioned. First, that the stages discussed above are carried out more or less simultaneously - there is no perceptible time-lag. Secondly, that in view of the hierarchical nature of the process of recognition, intelligibility depends on a series of discrete but intimately connected elements at various levels, from the phoneme to the sentence and beyond. But there is one further aspect of the communication process to consider, which is relevant to a discussion on intelligibility. This is what is commonly referred to as 'understanding'.

3.3 Intelligibility

Until now we have considered communication as a direct link between the speaker's linguistic store, his utterance and the listener's recognition (reception and perception) and relating to his own linguistic store. We have yet to consider the listener's response or reaction to what is said: in other words, his 'understanding' in a given situation. A further stage in the chain might require a listener to act, say, in response to a request.

In trying to arrive at a definition of intelligibility it is important to consider how far one should go along the communication chain. Does one stop at the perceptual level? Or does intelligibility necessarily involve 'understanding' and, where appropriate, action or reaction on the part of the listener?

Catford argues that an utterance can only be considered intelligible if it is what he calls 'effective'. This means that the listener should respond to the speaker's intention in a manner which is appropriate to his purpose in speaking. An 'ineffective' utterance is one which fails to do this. He says:

> The effectiveness of an utterance, as defined here, is not identical with what is usually meant by the term intelligibility. Speech is generally said to be intelligible if the hearer 'understands the words', i.e. if his response is appropriate to the linguistic forms of the utterance..... An utterance may be intelligible in this sense, yet ineffective in the sense that the hearer's response is not what the speaker intended (1950:8).

He gives the example of the foreigner who sees both cakes and tarts on a table. Wanting a tart, but knowing only the general word 'cake', he is disappointed when his hostess passes him a cake. The foreigner's utterance was intelligible, but ineffective. On the other hand, it would have been possible for the foreigner to ask for a tart in his own tongue and obtain it by extra-linguistic means, such as gesturing. In this case his utterance would be unintelligible but effective. Catford considers that the term 'intelligible' can only be used for utterances that are both intelligible and effective.

In the present investigation into the intelligibility of Nigerian English the speaker and listener are not placed in a typical speech situation, that is, two individuals conversing face to face. The Nigerian speakers spoke to the researcher in a recording studio and their speech is listened to by an audience of from one to ten British listeners, three thousand miles away, through the medium of taped recordings. The situation is analogous to a radio broadcast or a secretary listening to speech recorded on a dictaphone.

For the purposes of this investigation, intelligibility may be said to stop at the level of perception, that is to say, we are attempting to measure the amount of informtion received. This does not meet Catford's definition of intelligibility in that 'understanding' and listener's actions and reactions are not under investigation. However the notion of a relationship between speaker and listener, of a speech chain, is satisfied in that listeners are required to write down what they hear. The cycle is thus complete, starting with the speaker's message and ending with the listener's written version of that message. The investigation, therefore, assumes that intelligibility, for the present purposes, is concerned with decoding rather than with assessing 'meaning'.

3.4 Factors aiding and hindering intelligibility

In spite of the fact that the listener in this investigation is not in a position to observe the speaker and thus obtain visual as well as auditory cues to help him recognise the speaker's message, there are a number of factors inherent in language which assist him in decoding. The first of these is due to the fact that language is built up from a set of alternative possibilities. As Malmberg says, "Two units must be in opposition to each other or be identical" (1963:13). The sounds, words and grammatical patterns of the language can be clearly differentiated from each other, forming discrete units. Thus, /p/ is what it is because it is not /t/; 'present' is not pre'sent because of differing stress and intonation patterns; high is not low because it collocates differently. In the sentence the boys are shouting, boys and are are determined by the grammatical

rules of the language. The choices in language, then, are finite and limited.

Any utterance will provide more clues than are strictly necessary for the understanding of that utterance. This unnecessary or superfluous information is termed 'redundancy'. It is not necessary for each speech sound to be perfectly produced for it to be understood. The listener's experience of the 'rules' of the language, the linguistic context and the situational context are usually more than enough to enable communication to take place. For example, if all the English vowels are replaced by the neutral /ə/ a considerable degree of intelligibility can be maintained provided the rhythmic patterns of English are kept. It has been estimated, according to Hockett, that "the measurement of redundancy in English is approximately 50%, and there is some reason to believe that this figure holds for languages in general" (1958:89). Thus the laws of probability play a considerable part in the communication process.

On the debit side, there is the fact that communication rarely takes place in completely ideal conditions. 'Noise' is invariably present. 'Noise' may be regarded as any form of disturbance or interference which helps to obscure the intelligibility of a message sent by a speaker. Communication is always surrounded by uncertainties. Cherry lists these as follows:

(a) Uncertainties of speech sounds or acoustic patterning, e.g. variation in accents, tones or loudness.

(b) Uncertainties of language and syntax, e.g. differences in syntax, vocabulary, usage.

(c) Environmental uncertainties, e.g. street noises, telephone bells, background chatter.

(d) Recognition uncertainties, e.g. the peculiar past experiences of the listener, his familiarity with the speaker's speech habits, knowledge of language, subject matter, etc. (1968:279).

Many of these uncertainties are inherent in the situation in the present investigation. The Nigerian speakers are not using their mother tongue. Intelligibility can break

down at the psychological stage - that is, the speaker's linguistic store of English may not always be adequate, especially at the syntactic and lexical levels. The physiological stage is, however, the most crucial, for it is here that the pronunciation of the speaker is being tested (most of the cases of intelligibility failure listed in this investigation are the result of phonetic, rather than lexical or syntactic errors). The environmental uncertainties which affect the physical stage of transmission also present some possibilities of 'noise', but this has been kept to a minimum by ideal recording conditions in a sound-proofed studio and by taking care that listening took place in rooms unaffected by traffic and other noises. From the listener's standpoint, intelligibility failure can result at the physiological stage, that is, the stage of reception or 'hearing'. It is more probable, however, that intelligibility will break down at the psychological or perception stage, for it is here that the listener has to interpret the speech sounds he has heard and relate them to his own linguistic store. In addition, the listener at times has difficulty in interpretation due to a number of cultural differences between his and the speaker's background.

Yet in spite of these inherent drawbacks, the uncertainties due to various sorts of 'noise' are heavily outweighed by the more positive effects of redundancy and other linguistic and contextual clues. The great majority of what the Nigerian speakers say is understood by the listeners. Let us examine some actual examples taken from the present research, which reveal the powerful influence of redundancy and context.

Speaker Y7 pronounced 'first' as ['fɔs] in the phrase 'at first'. There were not enough clues for most listeners and 6 of them heard this as 'of course'. Yet speaker Y1 pronounced 'first' using the same vowel sound in the phrase 'the school 1st XI' and all the listeners interpreted it correctly. The context in this second instance compensated for the mispronunciation of the vowel in 'first'. Speaker H7 confused /p/ and /f/ and in the sentence 'the master usually gets a forefinger like this' pronounced 'forefinger' as ['fɔ:'pIŋgə]. Seven out of ten listeners were confused by this and wrote nothing at all. Yet speaker H10, talking about 'chemistry and physics' made the same error and

pronounced 'physics' as [ˈpɪsɪks]. He was understood correctly by all ten listeners, the contextual clues being so strong.

Where there are few clues or where ambiguity is possible, there is far more uncertainty on the part of listeners than where the context, situational or linguistic, provides a prop. Two more examples help to illustrate this. Speaker H8 pronounced 'seek' as [si:ʔ] in the sentence 'the parents will seek for her'. Nine listeners interpreted this as 'see' and only one wrote 'seek'. Again, Speaker H11 in the phrase, 'if, say, the university authorities can put fans in the sleeping rooms' pronounced 'fans' as [ˈfanz]. Only four listeners out of ten interpreted this correctly, the others writing 'funds', 'forms', 'fires', 'fountains', or nothing at all. At the phonetic level, then, mispronunciations are by no means always a barrier to intelligibility, because of the redundancy in language. But where there are no contextual aids misinterpretation can and does result.

The rhythmic patterns of individual words and of words in sentences are also powerful aids to the correct interpretation of the speaker's message. The Yoruba speakers, in particular, rarely use the neutral vowel /ə/ in unstressed syllables. Nevertheless, provided the correct stress patterns of the word were kept, most listeners had little difficulty in interpretation. Where, however, these patterns were not kept, and where other clues were few or lacking, communication tended to break down. For example, Y5 pronounced 'normally' as [nɔˈmali] in the phrase 'having a wife who works normally'. This incorrect stress pattern confused 9 out of 10 listeners, 5 of whom interpreted it as 'no money', illustrating the power of rhythmic patterns. Similarly, H1 pronounced 'secondary' as [sɛˈkandrI] in 'to secondary school'. Eight out of ten listeners heard this as either 'this country school' or 'this kind of school', again fitting their interpretation according to the rhythmic pattern they heard.

Incorrect rhythmic patterns, often in conjunction with incorrect vowel quantity, gave rise to a great many misinterpretations. Thus H12 pronounced 'to read even in their rooms' as [tʊ rid ˈivᵊn n ðɛə ˈru:mz]. Nine out of ten listeners misinterpreted this and versions such as the following appeared: 'to have heat in their rooms', 'to live in their rooms', 'to have women in their rooms', 'leave in

their rooms', etc. Rhythmic compression, that is, the telescoping of syllables and words together, also caused confusion to listeners. For example, Y7 pronounced 'not knowing what to do' as [nɔ̃'nõi wɔtju'du]. Eight out of ten listeners misconstrued this and wrote versions such as 'wondering what to do', 'now what shall I do', '.....to do' etc.

The influence of grammar is also strong. Usually the listener 'corrects' minor grammatical errors made by the speaker. Thus H7 talks about 'those boys who are not sent to primary school by their parent', the last word pronounced ['parənt]. Of the five listeners who interpreted this correctly, four wrote 'parents' to conform to the normal rules of grammar. The other five interpreted this as 'fathers' but even here the plural form was preferred to suit the context. Occasionally, lack of subject-verb agreement confused the listener. For example, H8 said 'friends which my wife have to entertain'. Six listeners interpreted this correctly, but the four who did not were confused by the verb form and wrote versions which fitted this pattern - 'my wife have' becoming 'might have', 'I might have' (two listeners), and 'I may have'.

Where, however, the lexical and grammatical deviations become further removed from the norm, considerable confusion arises, as the normal amount of redundancy in language is unable to compensate for these distortions. For example, Y8 who said 'I was given a double promotion' confused nine listeners; H5 with 'I will fall in for her' (= fall in love) confused seven listeners; H7 'they shout on us' confused seven listeners; H9 'anything can be done tangible about it' confused five listeners; while H10 with 'boys were being playing about' resulted in seven listeners giving three different versions, all of which had 'corrected' the original - 'boys had been playing about', 'boys would be playing about', 'boys were being played about .

Finally a word needs to be said about the cultural context. Apart from usages which are firmly fixed in Nigerian English and which caused some difficulty in interpretation, e.g. Y4 'my parents were transferred a lot' (= posted to a new job) and H2 'very tight friends' (= close friends), there

are other factors to consider. Different customs or institutions give rise to the need for new forms, which are not current in British English. Three such examples were noted: H1O 'district head', Y1O 'senior brothers' and H4 'middle school', which caused difficulty to 2, 4 and 9 listeners respectively.

To sum up, intelligibility can be hindered by 'noise', that is, disturbance or interference of any kind, but in normal circumstances these hindrances are counterweighted by redundancy in language and by the effects of context. Intelligibility can break down at any level, from the phoneme to the sentence, but self-correcting devices on the part of the listener help to overcome these difficulties. If, however, the distortion becomes too great, intelligibility failure will result and communication breaks down.

3.5 Intelligibility testing

As we said earlier, for the present purposes intelligibility is primarily considered as a matter of decoding. This decoding process, as Fry has suggested and as the examples in the previous section illustrated, involves recognition at different levels. It seemed necessary to test as many of these levels as possible and to attempt to correlate them, and if possible, to determine those levels that are the most crucial for intelligibility.

In Chapter 5 descriptions of the test material are set out in more detail, but it is appropriate here to outline the types of tests designed for the speakers and the various levels that are being investigated. Test I is one involving Connected Speech, that is, the speaker selects his own words when speaking on a given topic. Lack of intelligibility in this test can occur at all levels, from the phoneme to the sentence and beyond and also includes the possibility of intelligibility failure due to lexical and syntactical errors. Test II, Reading, again involves the listener in decoding connected speech, but because the words are chosen for the speaker, intelligibility failure due to lexical and syntactical errors can be eliminated (such errors being possible only if the passage is mis-read). In other words, attention can be focussed on phonetic errors only, with the proviso that reading

often induces a more 'careful' pronunciation than connected speech.

In Tests III and IV various elements of English are isolated for intelligibility testing. Test III deals with all the vowel phonemes, some of the consonants and a few consonant clusters for specific testing. Test IV concentrates on other important elements of English, namely Stress (placing of the tonic accent in words and sentences) and the attitudinal aspect of Intonation. In the four tests outlined, then, it was hoped not only to measure the intelligibility of Nigerian English in connected speech - the sum of all the various levels involved - but also, by isolating particular problems, to determine their relative importance.

Inevitably, intelligibility testing of this type contains some element of artificiality. The connected speech situations, the reading situations, the phonemic, stress and intonation tests all have to be constructed, indeed, contrived, in order to produce speech that can be measured and analysed for intelligibility purposes. Nevertheless, by comparing the Nigerian speakers with a norm - the native speaker - it is possible to show that the methods employed have some validity and are capable of measuring intelligibility. As described in Chapter 9.9, the RP speaker who performed a selection of the tests required of the Nigerian speakers obtained very high scores with the British listeners finally selected (some were rejected, as will be explained later). The minimum mean intelligibility score for the RP speaker was 98% in any given test. In addition, other experimenters have tried various techniques of intelligibility testing, with both connected speech and isolated levels of language, which have given satisfactory results. The next chapter surveys some of the large amount of research that has been done in this field, which has proved a useful source of ideas and techniques for the present investigation.

CHAPTER 4

Previous Investigations into Intelligibility

4.1 Introduction

A large amount of research into various aspects of intelligibility, scattered throughout many journals, has been carried out by phoneticians, linguists, psychologists, communication engineers and others. The quality and relevance of some of this research is possibly open to question, and at the same time it is difficult to judge how far one can generalise from this mass of experiments, many of which deal with a very restricted field and which sometimes produce conflicting results. But, as Crystal points out when discussing experiments on prosodic features:

> The value of the research has been very largely to explore the complexity of the subject being investigated from a number of different points of view, and to improve available techniques of analysis. Many of the experiments are of interest more for their methodology than for their descriptive statements (1969:75).

This view can be extended to cover all the experiments discussed in this chapter. Out of the mass on record, a limited number have been selected, which appear to have a bearing on the present investigation into the intelligibility of Nigerian English. The criterion for inclusion has been interest for their methodology or for their descriptive statements or for both.

4.2 Articulation tests and general intelligibility

Egan (1945), Fry (1947) and others have discussed the use of articulation tests in measuring intelligibility. Articulation tests aim at measuring the percentage of ideas correctly received by a listener. These tests can be used to measure the efficiency of both the mechanical means of transmission as well as the human links in the chain. The percentage of ideas correctly received represents the intelligibility score.

Fry and Egan list several types of possible articulation tests, for example, isolated words, isolated sentences or connected sentences, as well as tests made up of meaningless combinations of speech sounds. All of these are useful for making general statements about intelligibility. For example, Black has shown that the intelligibility of a word depends on the relative intelligibility values of the first two phonemes of a word; that words of two syllables are more intelligible than words of one syllable; and that an initial vowel is inherently more intelligible than a medial vowel (1962:347-54).

Articulation tests, too, were used by Richards and Swaffield to determine the efficiency of speech communication links. Listeners were asked to assess the intelligibility of five sentences reproduced in random order, set in an increasing amount of noise. The listeners used an Opinion Assessment Scale Based on Effort as follows:

A Complete relaxation possible: no effort required

B Attention necessary: no appreciable effort required

C Moderate effort required

D Considerable effort required

E No meaning understood with any feasible effort.

The opinions were scored as follows: E = 0, D = 1, C = 2, B = 3, A = 4. From this Richards and Swaffield concluded that the mid-point between B and C may be taken as the effort threshold, or, in other words, a mean score of 2.5 may be taken as marking the boundary between classes B and BC (1959:77-89).

The researches listed in this section tend to give results in terms of the articulation score, that is, the percentage of spoken words that the listener hears correctly, or, in the case of Richards and Swaffield, the subjective opinion of the listener on general intelligibility. Two other types of experiments, described below, attempt to

clarify the kinds of errors that occur, with vowels and consonants, when all context is removed.

4.3 Vowels and consonants

First, as to vowel confusions, Peterson and Barney (1952:175-84) studied the relation between the vowel phoneme intended by a speaker and that identified by a listener. Seventy-six speakers recorded two lists of 10 words which were heard by 70 listeners. The lists consisted of ten monosyllabic words beginning with /h/ and ending with /d/, differing only in the vowel phoneme, viz. 'heed, hid, head, had, hod, hawed, hood, who'd, hud, heard'. The results showed that certain vowels were generally quite well understood, especially /i:/, /ɜ:/, /æ/ and /u/. But when listeners disagreed on the classification of a vowel, the two classifications were nearly always in adjacent positions on the vowel diagram. The most frequently confused vowels were /I/, /ɛ/, /ɑ/, /ɔ/ and /ʌ/, and in particular, /ɑ/ and /ɔ/. There was also some evidence that the dialectal background of both speaker and listener affected both production and perception.

Two other by-products of this piece of research are of especial interest for any test of intelligibility. The first concerns the effect of learning, the second the importance of seating arrangements. On the effect of learning Peterson and Barney report as follows:

> From the second to the seventh test, the total number of disagreements by all observers diminished consistently from test to test, and the first test had considerably more disagreements than the eighth, thus strongly indicating a downward trend (1952:179).

On the question of the effect of listening positions on the scores obtained, the researchers have the following to say:

> The observers were arranged in nine rows in the auditorium, and the listeners in the back four rows had a significantly greater number of disagreements with the speakers than did the listeners in the first five rows (1952:179).

Miller and Nicely (1955:338-52) investigated perceptual confusions among consonants. Sixteen English consonants /p, t, k, f, θ, s, ʃ, b, d, g, v, ð, z, ʒ, m, n/ were spoken in front of /ɑ/ and subjected to noise and low pass filtering. These consonants provide a system of five articulatory features that characterise and distinguish the different phonemes: voicing, nasality, affrication, duration and place of articulation.

The results showed that voicing and nasality are little affected; but place is severly affected. Perception of any one of these elements is relatively independent, i.e. it is as if five simple channels were involved rather than a single complex channel. All the confusions can be reduced to 5 groups. Nearly all the confusions occur within these groups; few occur between them. The groups were as follows:

/p,t,k/; /f,θ,s,ʃ/; /b,d,g/; /v,ð,z,ʒ/; /m,n/

4.4 Stress

Fry carried out investigations into the perception of stress, which yielded particularly interesting results. He uses the term stress to cover both the articulatory side of speech and also a feature of the sounds perceived by the listener. The listener hears stress as a bundle of complex patterns bounded by the four psychological dimensions of length, loudness, pitch and quality. The physical correlates of these perceptual factors are duration, intensity, fundamental frequency and formant structure of the speech sound waves. The investigations set out to measure the effect of changes in three of these physical dimensions - duration, intensity and fundamental frequency - on the listeners' stress judgements, using synthesised speech stimuli. Listeners were asked to state whether they heard the verb-form or noun-form of the following five pairs of words: subject, object, digest, contrast, permit. The results of the three tests can be summarised as follows:

(a) Duration and intensity test

Both duration and intensity have a considerable influence in determining stress judgements.

Duration produced the greatest overall fluctuation in judgements, greater duration inclining the listeners to perceive the test words as nouns.

(b) Combined duration changes with step changes of fundamental frequency

Differences in fundamental frequency also affect stress judgements, listeners perceiving the higher syllable as the more stressed in preference to a lower one.

(c) Variations in fundamental frequency within one syllable

Different sentence intonation patterns imposed on the test items again demonstrated the all-or-none effect of frequency changes on stress judgements. It is possible that these changes outweigh the duration cue altogether and that sentence intonation may be the overriding factor in determining the perception of stress.

Fry concludes that all judgements on stress depend on the interaction of various cues. Although the formant cue, i.e. changes in vowel quality, was not investigated, this, too, may be a powerful factor in the perception of stress (1958:126-52).

4.5 Attitude and intonation

The testing of attitude and intonation raises a number of difficulties. As Crystal points out (1969:283-6), because of the variables inherent in the speech situation, not only must one consider pitch contrasts (involving tone and pitch range), but also other vocal features (loudness, tempo, rhythmicality) and non-vocal features (gesture, the situation in which the utterance takes place etc.). As Uldall puts it, discussing the difficulties of interpreting real intonations set in real contexts:

> However much one may wish to 'keep it clean', the fact is that the same kind of information is carried by several systems all present at all times: pitch, voice quality, tempo, gesture, facial expression, any one of which may be dominant at a given moment (1962:783).

To help overcome this problem, Uldall experimented

with synthesised intonation contours, as will be described later in this section.

The other major problem is the question of labels to attach to various 'meanings' associated with different intonations. There is difficulty in securing agreement among listeners on the meaning of the terms used. And even if there is agreement intonational contrasts cannot be so neatly differentiated as, say, phonemic contrasts. Crystal lists two tasks that need to be carried out: 'to be aware of the nature and the extent of the differences which exist betwen specific labels and then to take steps ensuring that only terms which obtain a general measure of agreement are used in the early stages of intonation analysis.....!(1969:296).

He describes a pilot experiment carried out to investigate these problems. 20 labels were selected from those in common use, some very different in meaning (e.g. 'angry', 'pleased'), others fairly similar (e.g. 'matter-of-fact', 'precise'). Six native speakers were asked to read these sentences in a given tone of voice. The sentences chosen were:

A Michael Johnson was in the office again this morning.

B This is the third time he's been in to see me in a week.

C There's that little black dog in the garden again.

The utterances were analysed and it was shown that attitudes are signalled by a complex of factors, not just a single 'tune'. Crystal concludes that it is more useful to consider contours as having 'primary' functions in specific situations, and situations as having 'primary' contours.

It was found that there were no cases of complete formal identity between labels; substantial overlapping occurred, e.g. between 'angry', 'impatient', 'irritated', 'vexed' and 'grim'. However the speakers found some labels highly meaningful (e.g. 'angry', 'impatient', 'boring',

'questioning', 'pleased') while others (especially 'precise') were next to meaningless. Great caution is needed, then, in using descriptive labels.

Finally, a further experiment with the same speakers showed that performance in relating utterances to a set of given labels is not necessarily identical with performance in relating labels to a set of given utterances. Some of the utterances were played back to the speakers who were asked to match the labels with the utterances. The highest score was a 60% correct identification and no two students made the same set of identifications and misidentifications. A few weeks later the same students were asked to supply their own labels to the same utterances. Correct identification fell to only 20% and nearly 100 different labels were introduced (1969:297-308).

Uldall, as discussed above, set out to discover how far listeners agreed on the attitudes expressed by certain intonation contours. 16 pitch contours were applied by synthesis to recordings of four sentences (statement, yes/no question, question-word question, command). The contours differed in range, final direction, shape (uni-directional or a change in direction) and in the treatment of weak syllables. Listeners were asked to rate the patterns with respect to 10 scales, consisting of pairs of opposed adjectives: bored/interested, polite/rude, timid/confident, sincere/insincere, tense/relaxed, disapproving/approving, deferential/arrogant, impatient/patient, emphatic/unemphatic, agreeable/disagreeable. Each of these scales was sub-divided into seven categories.

The assumption made was that intonation conveys three kinds of attitudes: (a) amount or strength of feeling or interest, i.e. emphasis (b) pleasantness or unpleasantness of personal relations and (c) a 'power' relationship between speaker and listener, i.e. authority versus submission. The results showed that when the scales are grouped in the three categories - pleasant/unpleasant, interest/lack of interest, authoritative/submissive - certain contours carry particular weight with respect to these factors (1960:223-234).

Uldall has also shown, by synthesising fourteen different intonation contours on the sentence 'He'll be here on Friday', that listeners were generally agreed that a pattern was a question or a statement. Contours ending at the highest pitch used were predominantly considered to be questions; contours ending at the lowest pitch used were considered to be statements. On the other hand, contours ending at mid-points tended to divide the listener's responses. Nevertheless, the main conclusion to be drawn is that question/statement is a genuine linguistic dichotomy, perceived largely by the level of the final pitch in the intonation contour (1962:779-83).

4.6 The effect of context

A number of studies have been made into the effect of context on intelligibility. All show that context is a crucial factor in intelligibility and that comprehension is very greatly enhanced when words are embedded in a context, linguistic or situational. Fry, for example, suggests that intelligibility can be increased twelve to fourteen times when a context is supplied:

> Suppose, for example, that a message is sent to a listener in conditions in which he can recognise about 5% of the words transmitted. If he is now given information about the subject matter of the speech, information which constitutes a suitable verbal context for the distorted message, and listens to the same speech sequence a second time, he will find the intelligibility very much increased and will understand 60% to 70% of what is sent to him. The physical stimuli which he receives are the same in both hearings, but the effect of contextual information is to convert incomprehensible speech into a message which the listener can understand with relative ease (1955:151-2).

Miller, Heise and Lichten investigated the problem of why a word is heard correctly in one context and not in another. Using three types of test materials - numerals 1-9, sentences of five major words linked by 'of', 'the' etc., and

nonsense syllables - they concluded that the most important variable in correct perception is the range of possible alternatives from which a test item is selected. Thus listeners will perceive the word 'six' correctly if they expect a numeral, but cannot perceive it if it is one of several hundred alternative monsyllables. With numerals the alternatives are limited; with nonsense syllables the choices are far greater in number and the listener must perceive each phoneme correctly. Thus the context in which the item occurs greatly helps to determine its intelligibility. The research also showed that it is harder to understand a word in isolation than if it is heard in a sentence. For example, in 'Apples grow on...' the range of possible continuations is sharply limited. By reducing the number of choices in the context of a sentence the accuracy of the listener's discrimination is improved.

The researchers also investigated the effects of repetition and concluded that repetition is of little advantage. The repeated message contains the same information and the same omissions as the original, so that listeners tend to persist in their original response (1951: 329-35).

Lieberman came to similar conclusions on the effect of context. In his experiment, three speakers read aloud two types of sentences - some containing maxims and clichés, others of a less familiar type. Both types of sentence contained test words occurring in similar phonetic environments. Examples of the two types of sentences are as follows:-

A stitch in time saves <u>nine</u>
The number that you will hear is <u>nine</u>

The test words were erased from all the sentences and listeners were asked to guess what the missing word was. The index of redundancy was calculated from the percentage of correct guesses. In the examples given above, redundancy was 0.85 and 0.1 respectively. The overall results of the listening tests show that the intelligibility of the excised words is inversely proportional to the redundancy index obtained from the total sentence context. The results also supported the hypothesis that listeners reserve their final

decision on the recognition of each word until they perceive an entire sentence, and that in some circumstances, a listener may be able to identify a word only after he adapts to the speaker's voice (1963:172-87).

4.7 The effect of rate and duration

Pickett and Pollack conducted an experiment to determine the intelligibility of excerpts from fluent speech and to see what effect the rate of utterance and the duration of the excerpt had on understanding. Four speakers recorded a short text at three rates of continuous utterance; very fast, normal and very slow. The items of differing duration were excised from the text, the same items for each rate of utterance, and 15 listeners were asked to write down what they heard. The research showed that short samples of the text were less intelligible than long samples. On the average, both fast and slow samples were equal in intelligibility when equated in duration. This was interpreted to mean that there is a balance between slow, precise articulation of a small amount of text and the more rapid, slurred articulation of a large amount of text, occupying the same time interval. In other words, it appeared that fast, slurred articulation is compensated by covering more context, while a slow utterance may cover less context, but be articulated more clearly. One further finding was that slow utterance was slightly more intelligible in noise (1963:151-64).

4.8 Memory span

In intelligibility testing, whether with groups of individual words or with complete sentences, the ability of the listener to retain what he has heard is of crucial importance. Obviously if listeners are required to reproduce stretches of speech that are too long to memorise, the test is no longer one of intelligibility of the speaker, but rather a test of the listener's memory.

Lado experimented with the length of a series of verbal forms that can be reproduced immediately after a single exposure. Using native speakers of American English and Spanish he found that 13 out of 14 subjects consistently

repeated a larger series of digits in their own language - about seven digits. He quotes a thesis by Sister Barbara M. Loe, who, using English-speaking Chinese and Chinese-speaking Americans, also found that subjects were able to retain more of their own language than of the foreign one. In a test involving repetition of sentences of increasing length it was found that the average memory span without a failure was 15.7 words in the native language and only 9.2 in the foreign one (1964:123-9).

4.9 Foreign accent

A number of investigations have been made into the abilities of foreign speakers of English, and, more especially, into the effect of foreign accent on intelligibility. In this section only the more general investigations will be considered. The more specific investigations into Indian, Jordanian and Ghanaian English will be considered separately in later sections (see 4.11 - 4.13).

B. J. Carroll (1963) made a preliminary study of the methodology involved in assessing the intelligibility of foreign speakers of English, and also considered the major factors which made for intelligibility. Three speakers - from India, Yugoslavia and Poland - were rated by 16 judges of four levels of linguistic sophistication. The four levels were represented by professional phoneticians, individuals who had received phonetics training at university level, non-experts, i.e. science and mathematics students, and non-native speakers of English. The judges were required to rate the speakers, impressionistically, according to ten speech characteristics, three of which were deleted in the final ratings. The seven remaining speech characteristics were: intelligibility, 'Englishness', intonation, stress, continuity speed and diction (i.e. pronunciation of segments). Intelligibility, for the purposes of this study, was concerned with the perceptual level only. Carroll concluded that the speech characteristic of 'stress', 'intonation' and 'diction' correlated most closely with 'intelligibility' (i.e. easy vs.

difficult to understand) and 'Englishness' (i.e. very English vs. most un-English). General efficiency in English, then, consists mostly of 'intelligibility' and 'Englishness'.

Two of the major causes of foreign accent, as stated in Chapter 1, are due to interference from the mother tongue and the emergence of regional forms irrespective of the mother tongue, as in the case of English in Southern Africa. But the problem of interference is not as straightforward as many linguists tended to believe until a few years ago. An especially interesting study of phonological interference has been reported by Brière (1968), who used a composite language consisting of Arabic, French and Vietnamese utterances, which was taught to a group of 20 monolingual American English speakers. Their speech was judged by native speakers of the three languages concerned, who were asked to rate the performance of the American speakers according to the following scale:

1. Good - 'native or near-native proficiency'
2. Acceptable - 'easily understandable but with a non-native accent'
3. Not Acceptable - 'difficult to understand or involving a substitution of a completely different sound'

Brière found that straightforward predictions of interference problems (i.e. by comparing the mother tongue and the target language) do not always produce the results expected. He expected that /x/ would be learnt quite rapidly, although the sound does not exist in American English, and also that front rounded vowels would be learnt significantly faster than back unrounded vowels. These predictions were in fact realised, although there is no apparent explanation for either of these phenomena. On the other hand, the investigation produced some unexpected results. Voiceless, unaspirated /t/ in initial position was significantly easier than the aspirated variety, which is not what would have been foreseen by comparing these sounds with American English.

Another surprising finding was that subjects were able to produce the sounds in isolation before being able to perceive them in the composite target language.

The general conclusion reached in this study is that in comparing the sound systems of two languages, a simple description of convergent and divergent categories is inadequate. Brière considers that 'any prediction of a hierarchy of difficulty of learning phonological categories must be based on descriptions of these categories in terms of exhaustive information at the phonetic level rather than on description solely in terms of distinctive features or allophonic membership of phoneme classes' (1968:74).

Turning now to the efficiency of foreign accents of English, Harlan Lane studied the effects of foreign accent and speech distortion on intelligibility. He categorises two types of distortion operations - 'response-independent', i.e. filtering, masking, time-sampling, etc., and 'response-dependent , i.e. undistorted transmission, but distortion produced by aphasic speech, foreign accent etc. Using an American, a Yugoslav, an Indian and a Japanese speaker, with 12 American listeners, he found that under all experimental conditions, speakers with a foreign accent were approximately 40% less intelligible than native speakers (1963:451-3).

The relationship between efficiency in aural comprehension and the production of intelligible speech was investigated by Black et al (1965:43-8), using 24 Japanese, 24 Hindi- and 24 Spanish-speaking students studying through English at American university level. The students were divided into sub-groups on the basis of their efficiency in aural comprehension. All students recorded lists from an English language intelligibility test, together with short segments of English prose. Three sets of measures were obtained: (a) intelligibility scores (b) ratings of foreignism in speech and (c) the amount of vocalised time in a set reading task. The researchers concluded:

> The better listeners were the more intelligible speakers; the better listeners were rated as

> having less foreignism in their speech; and the better listeners spent a greater amount of time vocalising..... On average, the ability to receive English on the part of foreign students is indicative of the merit of the English speech of these students (1965:48).

Perren (1963), too, reports on exploratory work into the various language skills of about 100 overseas students in Britain - from GCE students in technical colleges to post-graduate students - and on how their performance in English compared to that of British sixth form pupils and graduates. A battery of tests was used, involving pronunciation, hearing, interpretation of spoken English, interpretation of intonation and the understanding of written English, which were administered to the overseas students and 88 British students. While advising caution in the interpretation of the results, because of the many variables involved in language, the investigation nevertheless showed that in all the areas covered the overseas students scored consistently lower than their British counterparts. Taking the criterion score of British students as 100, the range of the overseas students' scores was as follows (figures in percentages)

Pronunciation test	75 - 97
Hearing phonemic distinctions	56 - 100
Interpretation of spoken English	9 - 100
Interpretation of intonation	10 - 90

4.10 Dialect distance testing

Procedures adopted for determining the mutual intelligibility of American Indian dialects or languages are relevant to testing, or rather quantifying, the degree of intelligibility between two dialects of English, e.g. Nigerian speakers and British listeners. Voegelin and Harris were among the first to establish a theoretical basis for this type of work. They first of all distinguish between two broad methodologies - by obtaining 'texts', that is, allowing native speakers to use words of their own choice and by 'eliciting', whereby the field worker determines the choice of the words or utterances. They then go on to discuss four approaches to the question of determining mutual intelligibility, using bilingual informants and tape recorders.

In the 'ask the informant' method questions are presented to the informant's perception rather than to the data, but informants may disagree. In the 'count sameness' method, the investigator looks for samenesses in words, phonetic inventory and morpheme classes and their arrangement, but these comparisons can be misleading, e.g. English shares a sameness in vocabulary with French, in grammar with German. In the 'structural status' method, interest is centred upon structure and forms, especially irregularities, numerals, prepositions etc. but even if such genetic likenesses are found, divergent pronunciation and structural changes (e.g. loss of case endings) may render the languages mutually unintelligible. The fourth approach, the 'test the informant' method, is probably the most rewarding.

In the 'test the informant' method speaker A records a text, which is broken up into suitably long stretches by the investigator. Speaker A then translates the text into English between each juncture point. Speaker B also records a text, which he in turn translates. Then Speaker A and Speaker B translate each other's texts and by so doing it is possible not only to discover whether the speech of A is intelligible to B (and vice versa) but to what extent it is intelligible. Voegelin and Harris also discuss the effect of learning on the part of the listener, which may enable him to understand things which he would not have understood otherwise. They conclude, however, that this process is always inherent in the speaker-listener situation and does not invalidate this technique of intelligibility testing (1951:322-9).

Hickerson, Turner and Hickerson used this technique to assess the transfer of information among Iroquois dialects and languages. Phrase by phrase interpreter translations were obtained to test both general intelligibility and specific understanding. In the first case, eight 2-minute texts were played through without interruption. Whole text translations were requested of informants, in which much leeway was permitted. In the second case, informants were asked to translate 30-second stretches of a few words each. The investigators found that high accuracy in the second test was not generally matched by a high rating in the first test,

although the test results were more alike at the lower levels. They conclude that the two-minute text in the first test should have been reduced to one minute (1952:1-8).

Pierce also employed the 'ask the informant' method in his investigation into the distance between American Indian speech communities. His informants recorded 1½ minute stretches of speech, which were divided into smaller ones of 3-8 seconds each, bounded where possible by natural pauses. Each test consisted of from 15-19 portions of speech, each portion being punctuated by pauses of about 4 seconds. Informants were asked to translate into English as much of each portion as they could, even if it was only a word or the gist of the discussion. The listener's translation was marked against a standard grading translation, scored as being right, wrong and occasionally half right (1952:208-18).

4.11 Indian English

Bansal (1966) made a study aimed at measuring the intelligibility of educated Indian English to listeners of different nationalities, especially British, American, Indian, Nigerian and German. Using 24 speakers with different Indian mother tongues and 234 listeners, the test material consisted of connected speech, reading of set passages, sentences and word lists. His findings are listed as follows:

(a) With British RP speakers and listeners mutual intelligibility is approximately 97%.

(b) With Indian English speakers, listened to by three or more British listeners, the mean intelligibility score was 70%, with a range for individual speakers of 53%-95%.

(c) Individual Indian speakers obtained different scores in different tests, but the average for the 24 speakers was fairly constant from one test to another.

(d) American and British listeners did not differ significantly in the scores obtained.

(e) Indian English was much less efficient among Indians having different mother tongues than RP was among speakers of that dialect.

(f) Compared to British listeners listening to Indian English, Indian listeners scored significantly higher in Part I (Connected Speech), but significantly lower in Part II (Reading Passage).

(g) Nigerian and German listeners understood Indian English much less well than British listeners.

(h) The most frequent causes of unintelligibility in Indian English were: wrong word stress, wrong sentence stress and rhythm, lack of clear articulation, unfamiliar proper names, incorrect vowel length, lack of aspiration in voiceless plosives, the absence of /w/, /v/, /θ/ and /ð/, and mistakes in the distribution of vowels and consonants.

4.12 Jordanian English

Elanani (1968) studied the intelligibility of Jordanian English to educated British listeners, using 15 Jordanian teachers and university students as speakers and 48 British listeners. The aim of the investigation was to determine the linguistic variables causing interference in the Jordanian use of English and to examine the points at which intelligibility losses recur in the process of speech.

The study appears to suffer from methodological drawbacks, as recordings were made in Jordanian classrooms, with both teachers and children joining in, and, in addition, group conversations were also taped. From these recordings extracts were made ('rather fragmented', as the writer admits) for the listeners to listen to. Listeners were required to write down utterances as well as they could and at the same time rate each utterance according to a 3-point scale, as follows:

Intelligible, i.e. readily comprehensible

Just intelligible, i.e. difficult to understand, but of which sense could be made

Unintelligible, i.e. impossible of comprehension.

The study includes detailed descriptions of educated Jordanian Arabic and a comparison between Jordanian English and RP, but does not contain clear statements of those areas where intelligibility breaks down, nor does it list these areas in order of importance. The main findings were that loss of intelligibility is due both to defective pronunciation and inadequate language selection on the part of the speakers. The main problems for Jordanian English speakers centre round a small number of consonants, most of the vowels and diphthongs ((both in quality and quantity), lack of weak forms and differing stress and rhythmic patterns.

4.13 Ghanaian English

Two studies have been made of the intelligibility of the English used by Ghanaians. Strevens (1965·119-20) reports on 'a quantitative assessment of the intelligibility which a West African pronunciation and Received Pronunciation respectively possessed for speakers of these two accents'. Tests were constructed in which context was eliminated. Four lists of monosyllabic words were compiled, the first two lists containing all the English words formed by a single phoneme or a combination of two phonemes, while the second pair of lists were chosen from monosyllabic words known to be difficult to West African speakers.

An RP speaker recorded all four lists. One speaker of Type 2 pronunciation (i.e. Southern Ghana) recorded a list of the first type and another of Type 2 pronunciation recorded a list of the second type. A hundred or so subjects (mainly speakers of either Type 2 pronunciation or RP) were asked to write down what they thought they heard. Strevens found:

> Taking first the recordings made by the Received Pronunciation speaker, the average score of Received Pronunciation-speaking subjects was 84%, while the average score of Type 2-speaking subjects was 62%. When it came to the recordings made by the speakers of Type 2 pronunciation, the averages were 27% by Received Pronunciation-speaking subjects, and 35% by Type 2-speaking subjects. Even allowing for imperfections in the

> design and conduct of the tests, it seems an inescapable conclusion, on the basis of these figures, that Type 2 pronunciation is a less efficient means of communication (1965:120).

Thus this experiment showed, rather surprisingly, that RP was considerably better understood by both RP and Ghanaian listeners.

Brown (1968:180-91), however, found the reverse to be true, namely that Ghanaian students understood each other's English better than they did expatriate English-speaking staff. The tests used in this experiment were administered to an RP speaker and Ghanaian speakers with Twi and Ewe as their mother tongue. The tests consisted of three parts - phoneme discrimination, placement of tonicity in sentences ('sentence stress'), rhythm and intonation. 45 Ghanaian students - 30 Twi speakers, 9 Ewe speakers and 6 with various mother tongues - acted as subjects. A summary of the results is shown:

		Mean intelligibility score (%)
Twi listeners	Twi reader	83
	RP reader	72
	Ewe reader	72
Ewe listeners	Ewe reader	78
	Twi reader	73
	RP reader	70

The results indicate that for both types of Ghanaian listeners, Ghanaian English is somewhat more intelligible than RP and that within Ghana itself, Twi listeners score highest with Twi speakers, as do Ewe listeners with Ewe speakers. These conclusions appear to reflect what one would expect in a real life situation.

4.14 Summary

In this chapter a considerable amount of research has been surveyed and from it a number of conclusions emerge which bear on methods of measuring intelligibility and the analysis of the causes of varying intelligibility scores.

It was shown in Section 4.2 that several types of articulation tests are possible, e.g. isolated words,

isolated sentences and connected sentences, and that intelligibility can be measured either by % correct scores or, as in the Richards and Swaffield tests, by listeners' subjective opinions on a scale A - E. In Section 4.10, in discussing dialect distance testing, two broad types of approach were considered, by obtaining 'texts', i.e. allowing the speaker to choose his own words or by 'eliciting', whereby the investigator decides on the words or utterances he wants spoken. In the first approach, the 'test the informant' method, involving translation of texts broken up into short stretches, was shown to be an effective way of testing mutual intelligibility. Bansal's investigation into Indian English, summarised in Section 4.11, adapted these methods and he also used articulation tests by eliciting various isolated words and sentences. In the present research similar procedures have been adopted.

Some of the investigations reviewed were aimed at specific aspects of English pronunciation. For example, in Section 4.3 it was seen that certain vowels, particularly those in adjacent positions, gave rise to intelligibility problems and that there were similar problems with consonants, particularly in respect of place of articulation. In Section 4.4 the perception of stress was seen to be a compound of several factors, especially duration, pitch and, above all, variations in fundamental frequency. In Section 4.5 the difficulties of equating attitude and intonation were examined, with particular reference to the choice of labels associated with various 'meanings'. However, it was also shown that certain intonation contours do carry particular implications. The relevance of these investigations to the present research is that they demonstrate procedures for isolating and examining the intelligibility of differing levels of spoken English, which may be useful in analysing causes of unintelligibility in connected speech.

Other experiments pinpoint important factors to be considered when devising intelligibility tests. In Section 4.6, for example, the crucial importance of context on the intelligibility of words and sentences was outlined, while in Section 4.7 it was seen that short samples of speech

were less intelligible than long samples, given the same rate of utterance. On the other hand, there is a balance between the intelligibility of slowly articulated short texts and the more rapidly articulated longer texts. But in Section 4.8 research showed that there is a limit to the length of utterance that a listener is able to retain - 15.7 words in the native language and 9.2 in a foreign language. In the dialect distance testing experiments, the importance of not over-taxing the listener's memory was also stressed. Finally, when devising tests, it can be assumed that a foreign accent will be less efficient than a native one. All the experiments cited in Section 4.9 point to this conclusion.

The body of research also helps to point out pitfalls to be wary of. In Section 4.3 the researchers illustrated the effect of learning, resulting in listeners' improved performance through repeated exposure to the same tests. They also stress the need for listeners to be seated at equal distances from the speakers if their performance is to be consistent. Bansal, in Section 4.11, showed that the Indian speakers' performance in different tests, e.g. connected speech and reading, varied considerably. There is no necessary correlation between the scores achieved in different tests. In the experiments on Ghanaian English, summarised in Section 4.13, two different experimenters obtained conflicting results in their assessment of the relative efficiency of RP and educated Ghanaian varieties of English. And both Crystal in Section 4.5 and Bansal in Section 4.11 reveal the wide range of scores obtained by different listeners on the same test, illustrating the need for a large body of listeners if any reliable results are to be obtained.

Unfortunately, some of the experimental material discussed here was not available to the writer when the tests were being devised in Nigeria. The fact that Crystal's work on intonation had not at that time been published is also a matter for regret. However, Bansal's work on Indian English - based on wide reading of previous experimental material - was available and a number of the procedures used by him have been adopted, or adapted, in the present investigation. A survey of the testing materials used is discussed in the next chapter.

CHAPTER 5

The Test Material

5.1 Test I - Connected speech

In Section 3.5 of Chapter 3 a brief outline was given of the types of tests used in the present investigation. It was stated that the aim was not only to test the speakers' connected speech - both spontaneous and read - but also other levels of English, namely phonemes, stress and intonation. But of these tests spontaneous connected speech is undoubtedly the most important. It represents the sum of all the levels; it enables the speaker to be judged not only on his pronunciation but also at the syntactic and lexical levels as well, and it comes closest to a real life speech situation.

The aim of this test was to secure representative texts from each of the 24 speakers, each text lasting about 5 minutes, spoken in as natural a situation as possible. To do this the researcher and speaker sat face to face over a microphone. As the speakers were all young men in their first year at university the three chosen topics were school life, marriage and university life. Each speaker spoke on one topic (the allocation system is discussed in Chapter 6) and it was found, as hoped, that the majority were interested in their topic and spoke freely and spontaneously with little prompting. As the object of Test I was to obtain samples of Nigerian English speech, it was necessary for the researcher to be as unobtrusive as possible and to intervene only when the speaker ran out of ideas on one aspect of his topic. The researcher therefore had a short list of questions prepared to prompt the speaker to continue talking. These questions are set out in Chapter 6. As a result, more than enough speech material was obtained; the edited texts of the Nigerian speakers' connected speech are to be found in Appendix 1.

In the analyses - both statistical and phonetic - that occur in succeeding chapters the Nigerian speakers' performance in Test I is taken to be the criterion of fundamental importance in assessing their ability in spoken

English. All the other tests are used as aids in diagnosing the cause of the degree of breakdown in communication as revealed in Test I.

5.2 Test II - Reading passages

In addition to obtaining samples of spontaneous connected speech it was considered desirable to ask the Nigerian speakers to read a prepared passage of connected prose. A reading passage differs from connected speech in that the speakers' words are chosen for him. Consequently, lack of intelligibility due to syntactic or lexical errors by the speaker is eliminated (unless the speaker should mis-read the passage). It was hoped that the elimination of these areas of error would assist in the analysis of those areas of Nigerian speech which constitute the most common barriers to intelligibility with British listeners. The disadvantage of a reading passage is that the speaker can concentrate on pronouncing the passage carefully, which may lead to a type of speech not typical of the speaker in normal situations. However, as many examination bodies use prepared reading as the sole measure of ability in handling connected speech in a foreign or second language it seemed to be a useful exercise to discover how far the scores on the spontaneous speech texts and the reading passages could be correlated.

Four criteria were used in selecting the material for the reading passages. The passage should be short (about 100 words); the type of English should be colloquial, not slangy but definitely not literary; the English should be modern; and finally all the segmental phonemes of RP English should occur at least once.

The problem arose as to whether the speakers should all read the same passage or different passages. If it were found necessary for an individual listener to test more than one speaker, such a listener might become familiar with a single passage on hearing it more than once. On the other hand, if different reading passages were selected, they might not be of equal difficulty. It was finally decided to select

three parallel passages (shown on the following pages) all adapted from the same book, Eric Ambler, Passage of Arms (Fontana, 1967). In actual fact, no listener was used twice and it would therefore have been better to have had all the speakers read the same passage. The way in which the passages were allocated amongst the speakers is discussed in Chapter 6.

5.2.1 Reading Passage A

Look, Roy, we didn't come here on this trip just for a vacation, but because we wanted to travel and because we wanted to see something of the world outside Harvard. If we were millionaires maybe we could have done it in our own private yacht. As we're poor, we have to go with other people. We're not in a position to choose our travelling companions, any more than they're in a position to choose us. So we've got to make the best of one another. Isn't that a sensible conclusion?

(91 words)

Adapted from Eric Ambler, Passage of Arms, Fontana Books, p.55

RP phonemes

/i:/	see	/eI/	vacation
/ɪ/	didn't	/aI/	private
/e/	sensible	/ɔI/	Roy
/æ/	travel	/əʊ/	go
/ʌ/	come	/aʊ/	our
/ɑ:/	Harvard		
/ɒ/	on	/Iə/	here
/ɔ:/	more	/ɛə/	millionaires
/ʊ/	look	/ʊə/	poor
/u:/	choose		
/ɜ:/	world		
/ə/	a		

/p/	poor	/m/	millionaire
/b/	but	/n/	not
/t/	to	/ŋ/	travelling
/d/	didn't	/l/	look, all
/k/	come	/r/	Roy
/g/	go	/j/	yacht
/tʃ/	choose	/w/	we
/dʒ/	just		
/f/	for		
/v/	vacation		
/θ/	something		
/ð/	this		
/s/	see		
/z/	isn't		
/ʃ/	vacation		
/ʒ/	conclusion		
/h/	Harvard		

5.2.2 Reading Passage B

There's usually a plane every day. You can go and come back here within twenty-four hours. It's perfectly simple. Betty goes along with you, telephones when you get there, arranges the meeting and takes you to it. Youdon't have to bother about a thing. Take June along with you for the ride if you like. She's got her passport in her maiden name. As a matter of fact she looks forward to these little trips. It makes a change for the poor girl. Look, old boy, you admit the deal's a good one for you. All I'm asking you to do is finalise it. (106 words)

Adapted from Eric Ambler, Passage of Arms, Fontana Books, p.139.

RP Phonemes

/i:/	deal	/eI/	plane
/I/	simple	/aI/	ride
/e/	every	/ɔI/	boy
/æ/	back	/əʊ/	phone
/ʌ/	come	/aʊ/	hours
/ɑ:/	passport		
/ɒ/	bother	/Iə/	here
/ɔ:/	passport	/ɛə/	there
/ʊ/	look	/ʊə/	poor
/u:/	June		
/ɜ:/	her		
/ə/	a		

/p/	perfectly	/m/	meeting
/b/	Betty	/n/	name
/t/	telephones	/ŋ/	along
/d/	day	/l/	looks, deal
/k/	can	/w/	with
/g/	goes	/r/	ride
/tʃ/	change	/j/	you
/dʒ/	arranges		
/f/	perfectly		
/v/	have		
/θ/	thing		
/ð/	there's		
/s/	simple		
/z/	there's		
/ʃ/	she		
/ʒ/	usually		
/h/	here		

5.2.3 Reading Passage C

As long as he has work that's important to him, a man like poor Charles doesn't usually do anything really foolish. It's only when the weight is suddenly taken away that things go wrong. It was like that when he came out of

the army. He'd been away for four years working with explosives. It was dangerous work but it had fascinated him. While he was there he'd hardly thought of anything else. When he came home safely to me and the boys, I was so happy. I was sure that all our troubles were over. The first thing that happened was that he fell in love with another woman - or rather, a nineteen year old girl. (117 words)

Adapted from Eric Ambler, Passage of Arms, Fontana Books, p.170.

RP Phonemes

/i:/	he'd	/eI/	weight
/I/	important	/aI/	like
/e/	when	/ɔI/	boys
/æ/	man	/əʊ/	only
/ʌ/	doesn't	/aʊ/	out
/ɑ:/	hardly		
/ɒ/	long	/Iə/	really
/ɔ:/	important	/ɛə/	there
/ʊ/	woman	/ʊə/	sure
/u:/	foolish		
/ɜ:/	work		
/ə/	a		
/p/	happy	/m/	man
/b/	been	/n/	nineteen
/t/	taken	/ŋ/	anything
/d/	doesn't	/l/	long, fell
/k/	came	/w/	work
/g/	go	/r/	really
/tʃ/	Charles	/j/	years
/dʒ/	dangerous		
/f/	four		
/v/	love		
/θ/	thing		
/ð/	that's		
/s/	suddenly		
/z/	as		
/ʃ/	foolish		
/ʒ/	usually		
/h/	has		

5.3 Test III - Phonemes

Tests I and II involved the speakers in connected English speech. It was also considered necessary to isolate the different levels of English, in this case English phonemes, and to test the speakers' ability to produce the distinctive contrasts. From the researcher's own experience of Nigerian speakers' difficulties and from the observations of others working in the same field, a list was drawn up of the main phonemic problems experienced by Yoruba and Hausa speakers.

It was realised that Yoruba and Hausa speakers do not have identical problems - although there is a considerable overlap, e.g. with the central vowels and devoicing of final consonants. The final list of major problems boiled down to the following: (a) confusion of all the RP vowels and diphthongs (in some cases more than one contrast was a difficulty e.g. /ʌ,ɒ/,/ʌ,ɜ:/; (b) a limited number of consonants; (c) devoicing of consonants in word-final position; (d) confusion of consonant clusters. The sentences set out in 5.3.1, which were read by all the speakers, can be divided up as follows:-

Sentences	1-16	-	problems involving	vowel contrasts
"	17-25	-	" "	diphthong "
"	26-39	-	" "	consonant "
"	40-43	-	" "	devoicing of final consonants
"	44-47	-	" "	consonant clusters
"	48	-	" "	labialisation of consonants

A major problem to be considered was whether the words illustrating the phonemic contrasts should be read in isolation or embedded in the context of a meaningful sentence. The advantage of having the words read in isolation is that, as the context is not critical for the phoneme being tested, it enables the listener to concentrate purely and simply on the phoneme. It also saves time and enables the same phoneme to be tested more than once in different words or in different positions in a word. The disadvantage is that the speaker is usually aware of what is being tested and tends to give a more careful and hence more artificial pronunciation than he would otherwise do. The advantage of placing the words to be tested in a context is that this represents a more realistic language situation. At the same time the speaker is usually unaware of what is being tested and so one obtains a more natural pronunciation. The disadvantages are that less items can be tested, which may make the list less reliable. In addition, it is possible that listeners might be guided to select one choice rather than another, because that choice may be more likely in a particular context. This was possibly the case with Nos. 12, 22, 24 and 25 listed overleaf.

Eventually it was decided to embed the words to be tested in 48 sentences. It was also decided that the sentences should be capable of ambiguity, so that at the listening stage listeners would have to decide which of the alternatives, differing only by one phoneme, was in fact spoken by the speaker. On the following pages the sentences are set out. It should be emphasised that the Nigerian speakers saw only the sentences and were not told what phoneme was being tested. For convenience, the alternative choices offered to the listeners are also placed here, indicating the phonemic distinctions expected of the speakers.

5.3.1 Details of Test III*

1.	I want you to hit the glass.	(hit, heat)	/I,i:/
2.	The man will come soon.	(men, man)	/e,æ /
3.	He saw the cat go down the road.	(cat, cart)	/æ ,ɑ:/
4.	Where did you find that bag?	(bag, bug)	/æ ,ʌ/
5.	Shall we keep this cock any longer?	(cock, cork)	/ɒ,ɔ:/
6.	Let's pull our thoughts together.	(pull, pool)	/ʊ,u:/
7.	Has the bus arrived yet?	(bus, boss)	/ʌ,ɒ/
8.	There were buds on every bush.	(buds, birds)	/ʌ,ɜ:/
9.	The donkey's legs were tired every night.	(tired, tied)	/aIə,aI/
10.	I can see the sheep moving.	(sheep, ship)	/i:,I/
11.	He shouted out "Fool".	(fool, full)	/u:,ʊ/
12.	Would you part fighting dogs?	(part, pat)	/ɑ:, æ/
13.	He saw the man who was short.	(short, shot)	/ɔ:,ɒ/
14.	The first train leaves at six o'clock.	(first, fast)	/ɜ:,ɑ:/
15.	Your hand is hurt.	(hurt, hot)	/ɜ:,ɒ/
16.	He was first to go.	(first, forced)	/ɜ:,ɔ:/
17.	Let me have some paper.	(paper, pepper)	/eI,e/
18.	The rice lasted a long time.	(rice, race)	/aI,eI/
19.	He has lost one of his toys.	(toys, ties)	/ɔI,aI/
20.	Our baby has a pink coat.	(coat, cot)	/əʊ,ɒ/
21.	Johnny has lost his bowl.	(bowl, ball)	/əʊ, ɔ:/
22.	I did not like his town.	(town, tone)	/aʊ,əʊ/
23.	The girls here could be smarter.	(here, hair)	/Iə,ɛə/
24.	Don't shoot that rare animal.	(rare, rear)	/ɛə,Iə/
25.	Don't offend her, she is a very pure girl.	(pure, poor)	/jʊə,ʊə/
26.	She was watching the baby.	(watching, washing)	/tʃ,ʃ/

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* A few of these items were taken from, or adapted from, L. A. Hill, Drills and Tests in English Sounds, Longmans, 1961.

27. He thought for a long while.	(thought, taught)	/θ,t/
28. I saw him thinking.	(thinking, sinking)	/θ,s/
29. The southern wind made the ship move.	(southern, sudden)	/ð,d/
30. She's crying because she's teething.	(teething, teasing)	/ð,z/
31. I thought it was a van.	(van, fan)	/v,f/
32. He expected a large vote.	(vote, boat)	/v,b/
33. Is the zinc in good condition?	(zinc, sink)	/z,s/
34. The shore was worse than we expected.	(shore, sore)	/ʃ,s/
35. Give me a ram instead.	(ram, lamb)	/r,l/
36. This is what you call a fin.	(fin, pin)	/f,p/
37. My ledger is very important to me.	(ledger, leisure)	/dʒ,ʒ/
38. He's taking it away with him.	(taking, taken)	/ŋ,n/
39. He rang when he received the message.	(rang, ran)	/ŋ,n/
40. When I saw him he had a new robe.	(robe, rope)	/b,p/
41. This is what he hid.	(hid, hit)	/d,t/
42. When he fell he broke his bag.	(bag, back)	/g,k/
43. He was asking about the prize.	(prize, price)	/z,s/
44. They asked him as soon as he came in.	(asked, axed)	/skt, kst/
45. I think he said "Next".	(next, nest)	/kst, st/
46. The girls must go at once.	(girls, girl)	/z,ø/
47. They walked home every day.	(walked, walk)	/kt, k/
48. I thought he said "cod".	(cod, quad)	/k, kw/

5.4 Tests IVA and IVB - Stress and intonation

Test IV aimed at breaking down yet other levels of English, namely stress and intonation. The test, in practice, fell naturally into two parts. The first 21 items attempted to measure the speakers' ability to place the nuclear accent accurately in words and sentences, by varying the place of the tonic according to the sense. Items 22-33 aimed at eliciting common intonation patterns from the speakers, to determine whether differing attitudes and emotions could be conveyed to the listeners.

Because the scores obtained by the speakers, as measured by the listeners' responses, differed significantly as between the two parts, it was later decided to treat the two parts of Test IV as two distinct tests, both from the point of view of scoring and interpretation, and also from the point of view of phonetic analysis. Consequently, from this point onwards the tests will be referred to as Tests IVA and IVB respectively.

Before discussing the test items in detail below, it would be as well to consider the general principles governing the method of obtaining the various intonation patterns from the speakers. It is not easy to induce speakers - even native speakers - to produce rhythmic and intonation patterns to order. Attempts were made to do this with the Nigerian undergraduates, but the results were unsatisfactory, largely because of the artificial nature of the operation. Finally it was found that different, and realistic, intonation patterns could be elicited if a situational context was created, in which the speakers' intonation patterns were embedded, spontaneously. Consequently, short, two line dialogues were devised, with both the researcher and the Nigerian speakers taking part, in order to build up, as far as possible, a realistic contextual environment. Later the researcher's voice was erased from the tape, leaving only the Nigerian speakers' responses for the listeners to judge for intelligibility purposes. It was not found practicable, however, to devise contexts for the six items concerning word-stress patterns, because of the difficulty of excising single words from sentences. We now come to details of the tests.

5.4.1 Test IVA - Placement of nucleus in words (word-stress)

There are a number of pairs of words in English, which differ principally in their accentual pattern, and which are useful for testing a speaker's ability to place the nuclear accent accurately. Thus we have the noun and verb forms 'record and re'cord, which in RP also contain segmental differences depending on whether the vowel is stressed or not. The main problem to be overcome was to find ways of inducing the speakers to produce the required accentual pattern. It was found by informal testing that some speakers had difficulty in reading conventional stress marks, such as those shown above; others had difficulty when shown a written form indicating whether the word was to be pronounced as a noun or verb, e.g. record (verb). Eventually it was found that if the required accentual pattern was written with strong visual clues, the speakers

needed only one practice attempt in order to grasp what was required of them. The practice examples used with all the speakers were written thus: EXport, exPORT. The first six test items of Test IVA, set out overleaf, required the speakers to place the nucleus three times on the first syllable and three times on the second. In this way the 24 speakers produced 144 recorded responses for intelligibility testing and analysis.

5.4.2 Test IVA - Placement of nucleus in sentences (sentence stress)

Test items 7-21 were designed to reveal the speakers' capacity to place the nuclear stress on different words in groups of three similar sentences. For example, in the sentence John motored to London, the nucleus can be placed in at least three places, depending on the emphasis the speaker wishes to give. Thus we have:

`John motored to London (i.e. not 'Bill')
John `motored to London (i.e. not 'cycled')
John motored to `London (i.e. not 'Manchester')

The researcher (called 'interviewer' in the tests overleaf) asked the Nigerian speakers to contradict as emphatically as possible the statements put to him in the first line of each dialogue. The statements were read to the speaker with a high falling tone on the key word the speaker was supposed to contradict, as follows:

Did `Bill motor to London?
Did John `cycle to London?
Did John motor to `Manchester?

In this way, five groups of sentences were tested, 15 responses in all from each speaker. The 24 speakers produced 360 recorded examples of ability to place the nucleus in sentences. As we shall discuss in Chapter 11 all the Nigerian speakers had considerable difficulty with this aspect of English.

5.4.3 Test IVB - Attitude and intonation

Test IVB (items 22-33 overleaf) set out to determine how far the Nigerian speakers could convey different attitudes, by means of intonation. Again it was found that it was possible to obtain very different intonation patterns from the speakers, by means of short situational dialogues, in which both researcher and speaker took part. Although the speakers often produced patterns considerably removed from the norms of RP (see Chapter 11 for an analysis) they nevertheless performed very much better in this test than they did in connection with the placing of the nuclear accent.

The items in this test are arranged in pairs of identical sentences, which were required to be spoken with different intonation patterns. Nos. 23, 25, 29, 31-33 contained short prompts for the speakers, in the form of instructions as to the tone of voice or attitude expected, viz. surprise, doubt, agreement. Where there were no prompts the speakers were asked to talk in a normal, matter-of-fact manner. Before the recording was actually made, the researcher and speaker had a practice run-through of all the items, in order to familiarise the speakers with the material. Again, there was no coaching of the speakers.

Item 22 aimed at eliciting from the speaker a falling statement pattern, in contrast to item 23 where a questioning, rising nucleus was expected. The RP versions of these might be as follows:

22. I'm 'going 'home to\morrow.
23. I'm 'going 'home to/morrow?

Item 24 anticipated a falling nucleus commonly associated with information-type questions, in contrast to the surprised tone of item 25 where a rising or fall-rise contour would be expected in RP, as shown:

24. 'What are you 'going to\do?
25. /v What are you •going to • do?
<u>or</u> 'What are you ,going to ,do?

Items 26 and 27 required the speakers to differentiate, by means of a final low falling nucleus and a final low rising nucleus respectively, between a set of complete and incomplete alternative choices, thus:

26. „Would you „like ˌorange or ˌlime or ˎlemon?
27. „Would you „like ˌorange or ˌlime or ˌlemon?

Items 28 and 29 attempted to elicit contrasting attitudes - positive with a falling tone and doubt with a fall-rise, as follows:

28. She's 'very ˎpretty. 29. She's ↘very ˇpretty.

Items 30 and 31 concerned normal inverted questions, the one being a simple enquiry with an expected low rising nucleus, the other showing surprise by means of a high rising nucleus thus:

30. 'Are you 'going to 'see him toˌnight?
31. 'Are you 'going to 'see him to'night?

Finally, items 32 and 33 required the speakers to use two question tags, both implying agreement with the interviewer's previous statement. It was known that Nigerian speakers usually use rising nuclei in these circumstances, but the hoped for rhythmic pattern was as follows:-

32. ˎYes, he ˎis, ˎisn't he?
33. ˎNo, he ˎisn't, ˎis he?

5.4.4 Details of Test IVA

1. reCORD
2. SURvey
3. obJECT
4. CONtrast
5. PROgress
6. transPORT

7. Interviewer Did John motor to Manchester?
   Speaker No, John motored to London.

8. Interviewer Did Bill motor to London?
   Speaker No, John motored to London.

9.	Interviewer	Did John cycle to London?
	Speaker	No, John motored to London.
10.	Interviewer	Is the red book on the floor?
	Speaker	No, the green book is on the floor.
11.	Interviewer	Is the green book on the table?
	Speaker	No, the green book is on the floor.
12.	Interviewer	Is the green magazine on the floor?
	Speaker	No, the green book is on the floor.
13.	Interviewer	Ghana is in North Africa.
	Speaker	No, Ghana is in West Africa.
14.	Interviewer	Ghana is in West Asia.
	Speaker	No, Ghana is in West Africa.
15.	Interviewer	Guyana is in West Africa.
	Speaker	No, Ghana is in West Africa.
16.	Interviewer	Today is Wednesday, February 7th.
	Speaker	No, it's Wednesday, March 7th.
17.	Interviewer	Today is Thursday, March 7th.
	Speaker	No, it's Wednesday, March 7th.
18.	Interviewer	Today is Wednesday, March 8th.
	Speaker	No, it's Wednesday, March 7th.
19.	Interviewer	This year is 1978.
	Speaker	No, it's 1968.
20.	Interviewer	This year is 1967.
	Speaker	No, it's 1968.
21.	Interviewer	This year is 1868.
	Speaker	No, it's 1968.

5.4.5 Details of Test IVB

22.	Interviewer	When are you going home?
	Speaker	I'm going home tomorrow.
23.	Interviewer	I'm sending you home tomorrow.
	Speaker (surprised)	I'm going home tomorrow?
24.	Interviewer	I'm off to London tomorrow.
	Speaker	What are you going to do?
25.	Interviewer	I'm going to work in a zoo.
	Speaker (surprised)	What are you going to do?
26.	Interviewer	I'm feeling thirsty.
	Speaker	Would you like orange or lime or lemon?
27.	Interviewer	I'm feeling thirsty.
	Speaker	Would you like orange or lime or lemon.....or
	Interviewer	I would like a coca-cola.

28. Interviewer What do you think of that girl?
Speaker She's very pretty.

29. Interviewer What do you think of that girl?
Speaker (doubtful) She's very pretty....but....
Interviewer Not very intelligent.

30. Interviewer I shall see Mr. Smith as soon as possible.
Speaker Are you going to see him tonight?

31. Interviewer I'm seeing him tonight.
Speaker (surprised) Are you going to see him tonight?

32. Interviewer He's a very nice man.
Speaker (agrees) Yes, he is, isn't he?

33. Interviewer He's not a very nice man.
Speaker (agrees) No, he isn't, is he?

In addition, the following items were recorded but not used in the intelligibility testing sessions, as no practicable means of testing them with phonetically untrained listeners was found.

Interviewer	Here's the book you wanted.
Speaker	I don't want that one, I want the other one.
Interviewer	Have you found the pens yet?
Speaker	I've found mine, but not yours.
Interviewer	What have you bought?
Speaker	A suit, trousers, socks and a tie.
Interviewer	What did he do when he arrived?
Speaker	He walked straight in, sat down and started to read the paper.
Speaker only:	"I'm going away", he said quickly to the woman.
	"Are you leaving me?" she asked in a low voice.
	"Yes, I am," he replied.
	"Get out!" she shouted angrily.

5.5 Tests - RP speaker

In order to provide a norm, to provide a partial measure of validity to the tests as a whole and to test each listener's capacity to listen accurately (as will be described more fully in Chapter 7), an RP speaker was recorded in

London. He performed a shortened version of each of the tasks required of the Nigerian speakers, as follows:

Test I - Connected Speech (see Chapter 7.6.5 for text)

Test II - Reading Passage. This was later discarded for listening purposes as it would have made listening sessions too long.

Test III - Phonemes (figures in brackets refer to items of the Nigerian speakers' tests)

1. I want you to hit the glass (1)
2. Has the bus arrived yet? (7)
3. The first train leaves at 6 o'clock. (14)
4. Our baby has a pink coat. (20)
5. Don't shoot that rare animal. (24)
6. She was watching the baby. (26)
7. The southern wind made the ship move. (29)
8. This is what he hid. (41)
9. They asked him as soon as he came in. (44)
10. They walked home every day. (47)

Test IV - Stress and Intonation (figures in brackets refer to Nigerian speakers' tests)

1. reCORD (1)

2. PROgress (5)

3. Interviewer: Did John motor to Manchester? (7)
   Speaker: No, John motored to London.

4. Interviewer: Did Bill motor to London? (8)
   Speaker: No, John motored to London.

5. Interviewer: Did John cycle to London? (9)
   Speaker: No, John motored to London.

6. Interviewer: This year is 1978. (19)
   Speaker: No, it's 1968.

7. Interviewer: This year is 1967. (20)
   Speaker: No, it's 1968.

8. Interviewer: This year is 1868. (21)
   Speaker: No, it's 1968.

9. Interviewer: When are you going home? (22)
   Speaker: I'm going home tomorrow.

10. Interviewer: I'm going to work in a zoo. (25)
    Speaker (surprised): What are you going to do?

11. Interviewer: What do you think of that girl? (29)
    Speaker (doubtful): She's very pretty.....

12. Interviewer: He's a very nice man. (32)
    Speaker(agrees): Yes, he is, isn't he?

5.6 Summary

The tests described in this chapter set out to assess the speakers' competence at all levels: the ability to communicate effectively in connected speech, both spontaneous and read; the ability to pronounce phonemes accurately; the ability to place the nuclear accent correctly in words and sentences; and, finally, the ability to convey different attitudes by means of varying intonation patterns. The RP speaker performed a shortened version of these tests. But of all these levels, spontaneous connected speech was considered to be of prime importance in assessing the speakers' proficiency in spoken English, and it is on performance at this level that the judgements on intelligibility described in later chapters are largely based.

CHAPTER 6

The Speakers and Recording Procedures

6.1 General considerations

As the aim of this research was to test the intelligibility of Nigerian speakers to other speakers of English, it seemed essential that the Nigerian subjects should be representative of educated Nigerian speech. Uneducated Nigerian speech was not likely to be more intelligible internationally than uneducated Newcastle or Detroit. Therefore it was decided that the sample of speakers should be drawn from a university population. If university students with the best possible secondary education behind them were not intelligible, or were only in part intelligible, this would indicate a failure in the educational process and the need for improved methods of teaching spoken English throughout the educational system.

The speakers selected were all first year students at Ahmadu Bello University, Zaria, in the north of Nigeria, which drew its students from many parts of the country. The speakers chosen all had Yoruba or Hausa as their mother tongue. Because of the prevailing political situation at the time, it was not possible to find speakers of English whose mother tongue was Ibo - another large and important language group. It was decided not to record speakers speaking the less important languages of Nigeria (even though their numbers run into millions) as it was thought this would introduce too many variables from which it might be difficult to make generalisations about Nigerian English as a whole.

By confining the research to speakers with Yoruba and Hausa as their mother tongue the variables were reduced and, as was outlined at the beginning of Chapter 2, there were good reasons for selecting these two groups. These may be summarised again as follows: (a) Yoruba and Hausa speakers combined represent about half the population of Nigeria and thus form an important cross-section; (b) Yoruba and Hausa

are placed in widely separated language groups, with many phonological differences, which give rise to two major varieties of Nigerian English; and (c) both Yoruba and Hausa are related to other Nigerian languages and the intelligibility problems they present are likely to be shared by English speakers of these other languages.

6.2 Criteria for selecting speakers

It was decided to record 24 speakers in all - 12 Yoruba and 12 Hausa speakers of English, matched as closely as possible. 12 male speakers from each group were considered adequate to secure a fair spread of types of educated Nigerian English. A smaller number of speakers might not have achieved this spread, while a larger number would have resulted in an over-proliferation of data to be analysed. It was decided not to select female speakers, firstly in the interests of homogeneity and secondly because of the scarcity of female Hausa students at the university.

Let us now examine the criteria which governed the selection of speakers. First, it was decided to record the speech of Nigerians who had had the best schooling available in their country. All the speakers had qualified for university entrance through their secondary school results. Students who had qualified for university through private study after leaving primary school teachers' colleges were not used as speakers. Thus, the speakers selected were representative of the best Nigerian English. All (except one) had a minimum qualification of a pass in English Language at School Certificate level, and 6 of the Yoruba and 6 of the Hausa speakers had qualifications in English at Higher School Certificate level.

Secondly, all the speakers selected were newly arrived, first year university students, recorded in their second term at university. This was done to reduce, as far as possible, any new influences on their English caused by the large English-speaking expatriate staff at the university. For this reason, second and third year students were not used for this study.

Thirdly, the speakers were selected in equal numbers from Arts and Science Faculties at the university. This was considered necessary, if a representative sample was to be obtained, in case the Arts students had, during their school days, been exposed to more English and language studies in general.

Fourthly, all the speakers had been brought up in a mono-lingual situation, at least until the end of their primary schooling. Potential speakers who did not fulfil this condition were rejected on the grounds that their English might have been influenced during their formative years by other types of Nigerian English. By restricting speakers to those who had spent the early part of their lives in their own areas, their speech would be more likely to be typical of Yoruba and Hausa English respectively.

Fifthly, none of the selected speakers had been outside Nigeria, which might have resulted in more favourable opportunities for learning English.

Sixthly, the speakers were selected from widely scattered geographical areas. This was especially necessary in the case of the Yorubas, since many of the university students came from one particular area, namely Ilorin. By selecting Yoruba speakers from as many areas as possible other than Ilorin, the possibility of recording only what might in effect be a purely local dialect of English was eliminated. In the case of the Hausa speakers, it was found that those attending the university originated from all the main Hausa towns and were thus evenly spread geographically.

6.3 Method of selection

Having decided on the criteria for selection set out above, the next step was to devise a method of selecting the speakers. This involved three separate stages:

(a) examining the entry forms of all first year students at the university;

(b) making a list of all those students who appeared, on paper, to meet the six criteria;

(c) interviewing and final selection of the 24 speakers.

The total number of first year students in the 1967-68 university session is shown in Table 6.1:

Table 6.1 Population of first year students 1967-68

	Yoruba	Hausa	Other languages	Total no. of entry forms
Arts & Social Sciences BA I	46	7	47	100
Science B.Sc. I	20	2	12	34
Agriculture I	14	3	5	22
Medicine I	18	3	25	46
	98	15	89	202

From these figures it will be seen that there were 98 Yoruba, but only 15 Hausa first year students to select from. The reason for the small number of Hausa students lay in the less well developed sixth form system in the more northerly parts of Nigeria.

The next step was to select from the total population a number of students for interview. Of the 98 Yoruba and 15 Hausa students a number were rejected according to the criteria set out in Section 6.2. As the majority of Yoruba students came from the Ilorin district, only a few were selected from this area, whereas those from other areas (Ibadan, Lagos, Ilesha etc.) were, other things being equal, automatically regarded as potential speakers. Of the small number of Hausa speakers available, all met the criteria, except that three students described themselves as Fulani by tribe. This needed investigating, as there was a tendency for some students to describe themselves as Fulani for social and prestige reasons even if Hausa and not Fulani was their mother tongue and even if not a single word of Fulani was understood.

The following letter was sent out to those students selected for the interview:

Ed/Inst/RES/10
Institute of Education,
Ahmadu Bello University,
Zaria.

.....
Dept. of .....
A.B.U.

Dear

Research into Nigerian English

I am proposing in the near future to make recordings of various types of Nigerian English for research purposes. I have selected you to be one of my possible speakers. I would be very pleased to meet you at.....on..... in the..... so that we can talk about the research scheme and make a final selection.

All those who are finally selected will be paid 5/- for a recording session of approximately one hour.

Please understand that this is not a "test" of your English. I merely wish to have some examples of Nigerian speakers of English. I look forward to your co-operation.

Yours sincerely,

B. W. Tiffen

The following number of students were invited for interview:

Yoruba	Arts	10 students
	Science etc.	11 "
Hausa	Arts	7 "
	Science etc.	8 "

The purpose of the interview was to check the particulars set out in the students' entry forms, to eliminate the Hausa speakers whose mother tongue was in fact Fulani; and to ensure that none of the speakers suffered from speech impediments.

Selection of the Yoruba speakers presented little difficulty and 12 were obtained on the spot. Of the 15 Hausa speakers available, 3 did not appear for interview and one

proved to be a native Fulani speaker. Consequently it was necessary to include among the final 12 selected, one speaker (H 11) who did not meet the minimum educational requirement of a School Certificate Pass in English, but who had nevertheless Higher School Certificate passes in Science subjects and had qualified for the Pre-Veterinary I course. Details of the selected speakers are shown in the next section.

6.4 The speakers' background

Each speaker was asked to complete the form shown below, giving details of their personal education and experience of English. Each was allocated a number from 1 to 12, preceded by Y in the case of Yoruba and H in the case of Hausa speakers.

Intelligibility of Nigerian English

1. PERSONAL DETAILS

Name ..... Speaker No. .....

Place of birth .....Date of birth ..... Age ...

Mother tongue .....Dialect .....

Other languages spoken .....

(fluent, fair, slight) .....

Parents' mother tongue .....

2. EDUCATION

Place where pre-school days were spent .....

Primary school(s) .....Dates .....

..... " .....

Secondary school(s) ..... " .....

..... " .....

WASC/"O" level English ..... " .....

WASC Spoken English ..... " .....

HSC/"A" level subjects

(a) Main ..... " .....

(b) Subsidiary ..... Dates .....

University subjects .....

(Main subject first)

3. ENGLISH AS A SUBJECT/MEDIUM

At what age did you begin to learn English as a subject?

Age ..... Primary .....

When was English first used as a medium of instruction?

Age ..... Primary .....

How old were you when you were first taught by a native English speaker? Age ..... Secondary .....

What proportion of all your secondary school teachers were native English speakers?

All or nearly all/most/about half/a few/none

4. MISCELLANEOUS

Is there anything further you wish to say about possible influences on your spoken English?

May your name be mentioned if the results of this work are published? Write Yes or No .....

Signature .....

Date .....

6.4.1 Age and origins

The speakers' ages and origins are summarised in Table 6.2:

Table 6.2 Speakers' ages and origins

Speaker No.	Age	Place of birth/ state		Mother tongue and dialect	
Y1	24	Pamo	(Kw.)	Yoruba	(Igbomina)
Y2	22	Aiyedayo	(Kw.)	"	(Yagba)
Y3	22	Obbo-Ille	(Kw.)	"	(Ekiti)
Y4	22	Ilesha	(W.)	"	(Ilesha)
Y5	22	Shagamu	(W.)	"	(Remo)
Y6	22	Kabba	(Kw.)	"	(Kabba)
Y7	22	Ilorin	(Kw.)	"	(Ilorin)
Y8	25	Ondo	(W.)	"	(Ondo)
Y9	23	Lagos	(L.)	"	(Lagos)
Y10	24	Ikoro	(W.)	"	(Ekiti)
Y11	21	Arandun	(Kw.)	"	(Igbomina)
Y12	21	Fiditi	(W.)	"	(Oyo)
H1	22	Zaria	(N.C.)	Hausa	(Zaria)
H2	23	Kontagora	(N.W.)	"	(Sokoto)
H3	23	Kano	(K.)	"	(Kano)
H4	24	Zaria	(N.C.)	"	(Zaria)
H5	21	Ringim	(K.)	"	(Kano)
H6	24	Katsina	(N.C.)	"	(no specific)
H7	22	Katsina	(N.C.)	"	(Katsina)
H8	21	Bungudu	(N.W.)	"	(Sokoto)
H9	22	Kebbe	(N.W.)	"	(Sokoto)
H10	24	Dogondaji	(N.W.)	"	(Sokoto)
H11	22	Hadejia	(K.)	"	(Kano)
H12	21	Wara	(N.W.)	"	(Sokoto)

Key to names of States:
K. - Kano
Kw. - Kwara
L. - Lagos
N.C.- North Central
N.W.- North West
W. - Western

The 24 male speakers selected were all between the ages 21 and 25. Of the Yoruba speakers all three predominantly Yoruba-speaking States were represented - Kwara, Western and Lagos; the Hausa speakers camc from the three predominantly Hausa-speaking States - Kano, North Central and North West. Thus wide areas of the country were represented by the speakers. In addition, it will be seen that a wide range of Yoruba and Hausa dialects were also represented, thus eliminating the possibility of recording only one particular kind of Yoruba or Hausa English.

At the interview, too, it was apparent that although all the speakers had had a similar educational background, their proficiency in spoken English varied considerably. This

was only to be expected and was indeed welcomed by the researcher who wished to record a typical range of ability among educated Nigerian speakers of English.

6.4.2 Educational qualifications in English

The speakers' educational qualifications in English are summarised in Table 6.3:

Table 6.3 Speakers' educational qualifications in English

Speaker No.	WASC English Language	WASC Oral English	HSC English	University Faculty
Y1	Pass	-	Main	Arts & Soc. Sci.
Y2	Pass	-	Main	" " "
Y3	Pass	-	Subsidiary	" " "
Y4	Credit	Pass	-	" " "
Y5	Pass	Pass	Main	" " "
Y6	Pass	-	Main	" " "
Y7	Pass	-	-	Medicine
Y8	Pass	-	-	"
Y9	Pass	-	-	Science
Y10	Pass	Pass	-	"
Y11	Credit	-	-	"
Y12	Credit	-	-	"
H1	Credit	Credit	Main	Arts & Soc. Sci.
H2	Pass	-	Main	" " "
H3	Credit	Credit	Main	" " "
H4	Pass	Credit	Main	" " "
H5	Pass	Pass	Main	" " "
H6	Distinction	Credit	Main	" " "
H7	Pass	Pass	-	Medicine
H8	Pass	Distinction	-	Agriculture
H9	Credit	Credit	-	"
H10	Pass	Pass	-	Science
H11	-	-	-	Pre-Vet. Med.
H12	Credit	Credit	-	Agriculture

Notes:-

HSC = Higher School Certificate
WASC = West African School Certificate

From the table above it will be seen that the Yoruba and Hausa speakers are evenly balanced at School Certificate level, as far as the written English papers are concerned, although the Hausa speakers achieved rather more credits or better than the Yoruba speakers. In the oral examination, however, the performance of the Hausa speakers

greatly surpasses that of the Yorubas. This reflects the generally accepted opinion that Hausa speakers do in fact have greater facility in spoken English than Yoruba speakers. It also possibly reflects the interests and influence of the larger proportion of expatriate staff to be found in the Northern secondary schools. At the Higher School Certificate level the performance of the two groups of speakers is again roughly parallel, with the balance slightly in favour of the Hausa speakers.

6.4.3 Speakers' experience of English

In the Table 6.4 below, the speakers' experience of English before entering university is tabulated:

Table 6.4 Speakers' experience of English

Speaker No.	English begun as a subject		English used as a medium		First taught by native speaker	Proportion of native speakers on secondary school staff
	Age	Class	Age	Class	Age	
Y1	7	I	8	II	22	None
Y2	8	I	12	V	14	All or nearly all
Y3	8	III	9	IV	14	About half
Y4	7	II	10	V	14	Most
Y5	8	III	10	V	14	A few
Y6	6	I	9	IV	14	Most
Y7	6	I	9	IV	13	A few
Y8	8	III	11	V	17	About half
Y9	6	I	8	III	19	A few
Y10	8	III	10	V	15	Most
Y11	7	II	9	IV	14	Most
Y12	8	III	10	V	12	A few
H1	10	III	12	V	14	All or nearly all
H2	9	III	11	V	14	Most
H3	9	III	10	IV	14	Most
H4	11	III	13	V	15	About half
H5	7	II	Not known		13	Most
H6	12	IV	14	VI	16	About half
H7	9	III	11	V	13	Most
H8	10	V	12	VII	13	Most
H9	11	V	12	VI	14	About half
H10	9	III	11	V	14	About half
H11	8	III	10	V	14	About half
H12	8	III	11	VI	13	About half

A number of interesting points emerge from the table above. The Yoruba speakers were introduced to English as a subject in primary school at an earlier age than their

Hausa counterparts. Taking the mean of the two groups, the Yoruba speakers began English at 7.25 years, the Hausa speakers at 9.4 years. Similarly, the Yoruba group were introduced to English as a medium at an earlier age than the Hausa group - 9.6 and 11.5 years respectively. All English teaching at primary school was conducted by Nigerian teachers.

However, at secondary level the Hausa speakers had more and earlier contact with native speakers of English than did the Yoruba speakers. The Hausa group as a whole were first taught by a native speaker at 14.0 years, the Yoruba group at 15.0 years. The Hausa group also had greater contact with native speakers. Whereas 5 of the 12 Yorubas had little or no contact with native English speakers, all 12 Hausas had been at schools with at least half, if not a majority, of native English speaking staff. We shall return to this point later when considering the results of the intelligibility tests in Chapter 9.

6.5 Recording details

All the speakers were recorded in a sound-proofed recording studio, at the Department of English, Ahmadu Bello University, Zaria. Thus the best possible conditions were obtained for clear and noise-free recordings.

The samples of English were recorded into a free-standing microphone, using a Ferrograph Series 5 tape recorder. The recording speed was $3\frac{3}{4}$ i.p.s. Each recording session lasted approximately forty-five minutes.

6.6 Recording Procedures

6.6.1 Recording Test I

Each speaker was asked to talk on one of three topics: School Life (Topic A), Marriage (Topic B) and University Life (Topic C). These topics were allocated to each speaker on a rotational basis as shown in Table 6.5:

Table 6.5 Allocation of topics in Test I

	Topic A	Topic B	Topic C
Speaker	Y1	Y2	Y3
	Y4	Y5	Y6
	Y7	Y8	Y9
	Y10	Y11	Y12
	H1	H2	H3
	H4	H5	H6
	H7	H8	H9
	H10	H11	H12

The speaker was told the topic selected for him, and asked to think about the subject for 2 or 3 minutes, with the aid of the six written questions shown below. These questions were meant to be a stimulus to enable the speaker to speak fluently and not be at a loss for words. They were used orally from time to time by the researcher during the course of the recording whenever a speaker appeared to be on the point of 'drying up'. With some speakers it was necessary to use only the first question to start them talking; with others it was necessary to use all the questions to stimulate them to talk for five minutes. Wherever possible, however, the researcher kept such promptings to a minimum.
The questions were as shown below:

Topic A School Life

1. Why did your parents first send you to school?
2. Tell me about your first impressions of primary school.
3. What difficulties did you encounter while at primary school?
4. Tell me about your first impressions of secondary school.
5. Did you prefer the junior or the senior part of the school?
6. Tell me about the sports, clubs and societies at your school.

Topic B Marriage

1. What are the traditional ways of choosing a wife in your society?
2. Tell me about any changes that are occurring.
3. What are the characteristics you look for in a wife?
4. Tell me how you selected, or hope to select, your own wife.
5. Would you bring up your own children differently from the way you were brought up?
6. Tell me about the advantages and disadvantages of having a wife who works.

Topic C University Life

1. What did you think university life would be like before you came here?
2. Tell me about your present impressions of the university.
3. Are you given too much work to do?
4. Tell me about social life in the university.
5. In what ways could university life be improved?
6. Tell me how the university is, or is not, preparing you for a future career.

After five minutes of recorded speech had been obtained, the speaker was asked to stop.

6.6.2 Recording Test II

Each speaker was asked to read one of the short reading passages shown in Chapter 5. The script for this and all subsequent tests were mounted on cardboard to eliminate the sound of rustling paper during the recording. Each speaker was given the opportunity to prepare the passage silently before reading it aloud. The allocation of passages to each speaker followed the rotational basis described in 6.6.1, viz.

	Passage A	Passage B	Passage C	
Speaker	Y1	Y2	Y3	etc.
	H1	H2	H3	etc.

On three occasions the researcher was asked by a speaker how to pronounce a particular word but this was disallowed.

6.6.3 Recording Test III

The 48 sentences illustrating the various phonemic problems, described in Chapter 5, were presented to each speaker, who was given the opportunity to read them silently before recording. Speakers were asked to pause slightly between each sentence and to read the sentences at normal speed. Again, no explanations were given by the researcher if a speaker asked how to pronounce a particular word.

6.6.4 Recording Test IVA

As has already been explained in Chapter 5, words in which the speaker was required to place the nuclear accent were presented with strong visual clues e.g. CONtrast, transPORT. Before the recording, speakers practised using the EXport - exPORT contrast. It was found that all the speakers, after this one practice run, understood what was required of them.

In the section requiring the speaker to place the nuclear accent on different words in five groups of three similar sentences, it was explained to the speaker that he should contradict the questions put to him as strongly as possible. Before the recording began the researcher and speaker went through all the sentences as a practice run. There was no coaching or prompting, however, and the aim was simply to familiarise the speaker with the text.

6.6.5 Recording Test IVB

As with IVA, all the sentences were read through once by the researcher and speaker before recording. It was also explained that sentences not preceded by a prompt (e.g. the instructions 'doubtful', 'surprised') were to be read, as far as possible, in a 'normal' tone of voice. Again, there was no coaching of any kind during the preliminary run-through.

6.7 Conclusion

Tests I, II, III, IVA and IVB were administered to all the 24 speakers, which resulted in some 8 hours of recorded speech before editing. The recordings were made in the period 12 Febuary - 22 March 1968.

CHAPTER 7

The Listeners and Listening Procedures

7.1 General considerations

While it was relatively simple to obtain a homogeneous group of Nigerian speakers, it was more difficult to ensure the same amount of homogeneity among British listeners. Certain minimum criteria were decided upon (see 7.2 below), and it was considered that any significant differences there might be in the performance of listeners could be offset by securing a relatively large number of listeners per speaker. Accordingly, it was decided that each speaker should be judged by 10 separate, competent listeners. Competence was determined by their ability to obtain a high score with the RP speaker on tape, as will be explained in 7.6.5. Those that failed to obtain the necessary minimum score were rejected and further listeners were substituted.

7.2 Criteria for selection

Three basic criteria were required before a listener was regarded as acceptable. First, listeners had to be 'educated'. For the purposes of this research this meant a minimum educational qualification of School Certificate or General Certificate of Education 'O' level. No exceptions were made to this basic criterion.

Secondly, 'British' implied being a native of the British Isles. For the purposes of this study listeners from the Republic of Ireland, the Isle of Man and the Channel Islands were acceptable, as were 13 listeners born overseas of British parents, in places as far apart as Buenos Aires and Singapore. All of the latter group, however, had had their primary education in Britain or in British schools abroad.

Thirdly, listeners were not acceptable if they had considerable experience of West African speakers of English. Thus none of the listeners had resided in West Africa, although a few had talked to Nigerians, for example on a casual basis at work.

7.3 Details of listeners

240 listeners (10 per speaker), all living in the London area, were used. 18 others were rejected on the grounds of their scores when listening to the RP speaker. Acceptable listeners were given a number 1 - 240, preceded by L, to distinguish them from the speakers' numbers. Details of each listener were recorded on the form reproduced below:

DETAILS OF LISTENER

(Please tick in appropriate boxes)

Listener No.: ..... Speaker No.: .....

Name: .....

Mr. ☐
Mrs. ☐
Miss ☐

Age

Under 18	18 - 44	45 -59	60 and over

Occupation: .....

If student, please name institution: .....

Nationality: .....

Born in .....(town) .....(County)

Main primary school .....(town) .....(County)

Main Secondary School .....(town) .....(County)

Education equivalent to

Under O-level	O-level	A-level	University or Professional

What variety of English do you speak? .....
(e.g. Scots, Newcastle, BBC, West Country, London etc.)

Have you had any special training in phonetics or spoken English? ☐ Yes ☐ No

If YES, please give details .....

Other languages spoken:

	Fluent	Fairly good	Fair
1.			
2.			
3.			

Have you lived overseas for more than one year?

____ Yes ____ No

If so, where .....(Country)

Have you often talked to English speaking Nigerians ☐
" " West Africans ☐
" " foreigners ☐

Special linguistic influences not covered by the questions above .....

.....

May your name be mentioned in the appendix of the research publication? ☐ Yes ☐ No

7.4 Listeners' age, sex, origins, education and occupation

Listeners were not required to state their exact age, but gave the age groups into which they fell, as shown in Table 7.1:

Table 7.1 Listeners' age groups

Under 18	18	
18 - 44	209	(87%)
45 - 59	10	
60 and over	3	
	240	

Of the 240 listeners, 91 were males and 149 females. The preponderance of females was due to the fact that all the speech therapists used were female, while in the other categories of listeners listed below females appeared to be more willing to volunteer than males.

As far as the origins of the listeners are concerned, 80% were English, with a high proportion from the surrounding areas of London. Their origins are as shown in Table 7.2:

Table 7.2 Listeners' origins

England	199
Scotland	12
Wales	9
Northern Ireland	1
Republic of Ireland	4
Isle of Man	1
Channel Islands	1
Overseas (of British parents)	13
	240

Listeners' educational qualifications, which fell into 3 categories, are shown in Table 7.3:

Table 7.3 Listeners' educational qualifications

'O' Level	39
'A' Level	126
University or Professional	75
	240

For the purposes of this study, undergraduate students and similar were classified as 'A' Level.

The occupations of the listeners are listed in Table 7.4:

Table 7.4 Listeners' occupations

Students of speech therapy	35
Students of speech and drama	24
Undergraduates	35
Postgraduate students	12
Technical college students	13
Teachers and lecturers	24
Sixth form pupils	25
Miscellaneous	72
	240

The 'Miscellaneous' group consisted mainly of listeners available only in the evenings and included business people, civil servants, journalists, housewives etc.

7.5 Listening procedures

Under ideal conditions it would have been preferable to have had all listening sessions in identical surroundings, for example, a sound-proofed studio at University College, London. This was not practicable, however, in view of the large number of listeners required and the fact that the majority were available only at their place of work or at their homes in the evenings, scattered over a wide area of London. Accordingly, the researcher had to travel to various colleges, hostels, offices and private houses in order to obtain the required number of listeners.

The question of whether to hold individual or group listening sessions had also to be decided. The case against holding individual listening sessions was that, as each sitting lasted approximately one hour, it would not have been a practicable proposition in the time available to hold 240 individual sittings. Group sessions, on the other hand, had the advantage that a larger number of responses could be obtained at one sitting and time could thereby be saved.

Eventually, it was decided to hold both individual and group sessions, with the latter preponderating. 58 listening sessions were needed to obtain the required number of competent listeners per speaker. These can be summarised as follows:

No. of listeners per sitting:	1	2	3	4	5	6	7	8	9	10
No. of sittings	6	8	8	10	14	7	2	1	-	2

Total no. of sittings: 58

The average number of persons per sitting was 4.1. The allocation of listeners to each speaker is shown in Appendix V.

7.6 Methods of listening

The use of earphones by listeners was considered, but rejected as it would not have been possible to use this method of listening in the large majority of cases e.g. at places of work or private houses.

In all the listening sessions, therefore, group or individual listeners listened to the tapes directly from the tape recorder. The model used was a Philips 4304 tape recorder, played at $3\frac{3}{4}$" i.p.s.

It is difficult to estimate exactly how far the acoustic conditions differed in each of the many rooms used for listening sessions. Great care was taken, however, to ensure that all listening sessions took place in a room free from extraneous noise such as traffic. In addition, listeners were arranged in a semi-circle round the loudspeaker, not more than two rows deep, to ensure that no one listener was too far removed from the tape recorder to hear properly. The generally very high level of agreement in the listeners' ratings of the speakers (see Chapter 9.8) would seem to imply that listening conditions did not vary to any significant extent from room to room.

On all occasions, listeners produced a written response, as explained in succeeding sections. The possibility of requiring listeners to give oral responses was rejected on three grounds. Firstly, oral responses were only possible with individual listening sessions; secondly, there was no guarantee that the listener would reveal to the researcher all the words or phrases he had not understood; thirdly, no permanent record could be obtained for further study and analysis at a later date. Written responses overcame all these objections.

7.6.1 Listening to Test I

As was stated above, all responses obtained were written. Bansal (1969) describes a number of methods used to obtain oral responses, all of which were unsatisfactory. He first tried a push button lighting device, whereby the listener switched on a red light each time he did not understand a word. This was unhelpful because it was certain the listener had misunderstood a number of words, yet failed to press the switch. The same was true when the listener was asked, when he did not understand, to signal with his finger.

Again, there could be no certainty that he had understood all the other words and phrases correctly. Another method used by Bansal, which he discarded, was to ask the listener to point out his difficulties orally as the recording proceeded. Again, this was difficult to measure objectively. Another system was to play the connected speech sentence by sentence and ask the listener to repeat what he had heard or to express it in his own words. Again, it was difficult to measure the intelligibility of the speech objectively by this method. Finally, Bansal decided to divide the text into units of approximately the same length and to ask the listener to reproduce as exactly as possible what he had heard, orally in individual sessions, and in writing in group session.

This was the system used in the present investigation, except that in all cases written responses were required in order to obtain a more permanent and easily verifiable record. The Yoruba and Hausa speakers' connected speech texts were edited to make them all approximately the same length. The researchers' own voice was erased from the tape. The final edited texts presented to the listeners were, on average, 353 words in length, with a range of 304 to 383 words and are shown in Appendix I.

The texts of each speaker were then divided into units of approximately 9 or 10 words. This was considered to be the optimum average length if the listeners' memory was not to be overtaxed. Wherever possible units were divided up into sense groups, ranging in length from 3 to 16 words, but with a mean length of 9.8 words. The number of words in the text, the number of units and the average number of words per unit for all speakers, including the RP speaker, are shown in Table 7.5:

Table 7.5 Division of connected speech texts into units

Speaker		No. of words	No. of units	Av. no. of words per unit
Y	1	365	40	9.1
	2	346	36	9.6
	3	360	35	10.3
	4	364	36	10.0
	5	347	36	9.6

Table 7.5 (continued)

Speaker	No. of words	No. of units	Av. no. of words per unit
Y 6	348	35	9.9
7	375	39	9.6
8	382	38	10.1
9	368	36	10.2
10	362	36	10.0
11	375	39	9.6
12	379	40	9.5
H 1	304	32	9.5
2	357	36	9.9
3	383	38	10.1
4	377	40	9.4
5	340	33	10.3
6	378	40	9.5
7	367	38	9.7
8	343	34	10.1
9	311	32	9.7
10	336	35	9.6
11	307	32	9.6
12	362	35	10.3
Mean	353.0	36.2	9.8
RP	99	10.0	9.9

Examples of how the connected speech was divided up into sense groups are shown below:

> The hostel accommodations,/well, I don't know what the university is trying to do about it/ but at present we are three in a room/ and I don't think it is convenient for people to stay three in a room/ because it looks like, I mean, a secondary school dormitory./ (Y6)

> Myself, the characteristics that I look for in choosing a wife/ are first of all physical beauty,/ how she appears to me, how much I am attracted to her/ and secondly her character./(H5)

On a number of occasions, however, units had to be divided not according to the sense groups determined by grammar, but according to the hesitations or pauses made by the speaker, as for example:

> Before I came here my thought about university was that/it would look much like the life in secondary school./ (Y3)
>
> Well, before I came here I heard a lot of stories/ about the university from my friends/ (H3)

Pauses and hesitations such as those shown in the two examples above did not appear to affect the listeners' ability to comprehend the whole sentence. It is of interest to note that a number of speakers introduced these pauses especially before a clause introduced by 'that'.

Before each listening session began listeners were told in advance the subject matter of the text, i.e. School Life, Marriage or University Life. It was felt that this was justifiable in that it provided the listener with a framework within which to focus his attention. In real life it is uncommon to listen to connected speech in a complete vacuum. Listeners were also told to ignore hesitation phenomena such as 'you see,' 'you know,' 'well,' 'I mean', etc.

One further problem was that some speakers used abbreviations and names that would certainly have been unfamiliar to most British listeners, and which would have interfered with the intelligibility of the speaker concerned. It was decided that the abbreviations, place names, titles and tribes listed below should be revealed to the listeners in advance. These were dictated immediately before the unit in which they occurred was played back. The list is as follows in Table 7.6:

Table 7.6 Terms likely to have been unfamiliar to listeners

Abbreviations	Speaker
HSC = Higher School Certificate	Y6
ABU = Ahmadu Bello University	Y6
Zoo = Zoology	Y9
Place names	
Dogon Daji	H10
Ondo	Y8
Sokoto	H10
Zaria	H7

Table 7.6 (continued)

	Speaker
Titles and names	
Mallam Smith	H7
Mallam Zubeiru Usman	H4
Tribes	
Fulanis	H1
Hausa	H4
Ibos	H1
Yoruba	Y8
Yorubas	H1

During the listening sessions, the connected speech texts were played unit by unit, the tape recorder being stopped by pressing the pause button while the listeners wrote down what they had heard. Listeners were asked to make a vertical stroke (/) after writing each unit to help simplify the marking at a later stage. This procedure continued until all the units had been played through. No listener, at any time, stated that he found a particular unit too long to recall.

Thus, as all listeners were required to write down the text as they heard it, unit by unit, a permanent written record was obtained, which enabled the researcher to make detailed comparisons between the original text and the listeners' version of it and to ascertain where intelligibility had broken down.

Finally, at the end of the test on connected speech each listener was asked to give a subjective judgement on the speaker's intelligibility. This was based on the Richards and Swaffield 5-point scale discussed in Chapter 4.2. Listeners were asked to assign a grade A - E according to the amount of effort required to understand a particular speaker. An analysis of this grading will be discussed in Chapter 9.8.

7.6.2 Listening to Test II

The procedure adopted for listening to the reading passages was the same as that for connected speech, namely, the passages were divided up into units as shown in Table 7.7.

Table 7.7 Division of reading passages into units

	No. of words	No. of units	Av. no. of words per unit
Passage A	91	9	10.1
B	106	11	9.6
C	117	11	10.6
Mean	104.7	10.3	10.1

The passages, divided into units, are shown below:

Passage A

Look, Roy, we didn't come here on this trip just for a vacation,/but because we wanted to travel/and because we wanted to see something of the world outside Harvard. / If we were millionaires maybe we could have done it in our own private yacht. / As we're poor, we have to go with other people./ We're not in a position to choose our travelling companions,/any more than they're in a position to choose us./ So we've got to make the best of one another. / Isn't that a sensible conclusion?/

Passage B

,There's usually a plane every day./ You can go and come backe here within twenty-four hours./ It's perfectly simple. Betty goes along with you,/ telephones when you get there, arranges the meeting and takes you to it./ You don't have to bother about a thing./ Take June along with you for the ride if you like./ She's got her passport in her maiden name./ As a matter of fact she looks forward to these little trips./ It makes a change for the poor girl./ Look, old boy, you admit the deal's a good one for you./ All I'm asking you to do is finalise it./

Passage C

As long as he has work that's important to him,/ a man like poor Charles doesn't usually do anything really foolish./ It's only when the weight is suddenly taken away that things go wrong./ It was like that when he came out of the army./ He'd been away for four years working with explosives./ It was dangerous work but it had fascinated him./ While he was there he'd hardly thought of anything else./ When he came home safely to me and the boys, I was so happy./ I was sure that all our troubles were over. /The first thing that happened was that he fell in love with another woman/ - or rather, a nineteen year old girl./

Before the passage was played back the listeners were told that they would hear an extract from Eric Ambler's

A Passage of Arms, but no further details were given. As with the connected speech texts, the reading passage was played through unit by unit until the passage was completed.

7.6.3 Listening to Test III

The 48 sentences, each containing a phonemic ambiguity, were each played back separately, with a 3 or 4 second pause between each sentence. The listeners were required to indicate the contrast they heard by placing a tick against the appropriate word in the form reproduced below. For convenience, the correct answers are indicated here although, of course, these were not available to the listeners.

TEST III

SPEAKER NO.: LISTENER NO.:

Indicate by a tick in the appropriate bracket which word you hear on the tape. If you are not sure, leave blank.

1.	( ) heat	(✓) hit	I want you to.....the glass.
2.	(✓) men	( ) man	The.....will come soon.
3.	(✓) cat	( ) cart	He saw the.....go down the road.
4.	( ) bug	(✓) bag	Where did you find that.....?
5.	( ) cork	(✓) cock	Shall we keep this.....any longer?
6.	(✓) pull	( ) pool	Let's.....our thoughts together.
7.	( ) boss	(✓) bus	Has the.....arrived yet?
8.	( ) birds	(✓) buds	There were.....on every bush.
9.	(✓) tired	( ) tied	The donkey's legs were..... every night.
10.	( ) ship	(✓) sheep	I can see the.....moving.
11.	(✓) fool	( ) full	He shouted out "....."
12.	(✓) part	( ) pat	Would you.....fighting dogs?
13.	(✓) short	( ) shot	He saw the man who was.....
14.	( ) fast	(✓) first	The.....train leaves at 6 o'clock.
15.	( ) hot	(✓) hurt	Your hand is .....
16.	(✓) first	( ) forced	He was .....to go.
17.	(✓) paper	( ) pepper	Let me have some.....
18.	( ) race	(✓) rice	The.....lasted a long time.
19.	(✓) toys	( ) ties	He has lost one of his.....
20.	( ) cot	(✓) coat	Our baby has a pink.....
21.	(✓) bowl	( ) ball	Johnny has lost his.....
22.	( ) tone	(✓) town	I did not like his.....
23.	( ) girls' hair	(✓) girls here	The .....could be smarter.
24.	(✓) rare	( ) rear	Don't shoot that.....animal.
25.	( ) poor	(✓) pure	Don't offend her, she is a very.....girl.

TEST III (continued)

26.	( ) washing	(√) watching	She was.....the baby.
27.	(√) thought	( ) taught .	He.....for a long while.
28.	(√) thinking	( ) sinking	I saw him.....
29.	( ) sudden	(√) southern	The.....wind made the ship move.
30.	(√) teething	( ) teasing	She's crying because she's....
31.	( ) fan	(√) van	I thought it was a.....
32.	(√) vote	( ) boat	He expected a large .....
33.	( ) sink	(√) zinc	Is the.....in good condition?
34.	(√) shore	( ) sore	The.....was worse than we expected.
35.	(√) ram	( ) lamb	Give me a .....instead.
36.	( ) pin	(√) fin	This is what you call a.....
37.	(√) ledger	( ) leisure	My.....is very important to me.
38.	(√) taking	( ) taken	He's.....it away with him.
39.	( ) ran	(√) rang	He.....when he received the message.
40.	( ) rope	(√) robe	When I saw him he had a new.....
41.	( ) hit	(√) hid	This is what he.....
42.	(√) bag	( ) back	When he fell he broke his.....
43.	(√) prize	( ) price	He was asking about the.....
44.	( ) axed	(√) asked	They .....him as soon as he came in.
45.	(√) next	( ) nest	I think he said, "....."
46.	( ) girl	(√) girls	The.....must go at once.
47.	( ) walk	(√) walked	They.....home every day.
48.	(√) cod	( ) quad	I thought he said "....."

7.6.4 Listening to Tests IVA and IVB

Tests IVA and IVB were originally administered as one test, but as was explained in Chapter 5.4, it was decided to treat them later as two distinct tests in view of the dissimilarity of speaker performance in each part of the test. It will be recalled that different stress and intonation patterns were elicited by using short, contextualised dialogues in which both the researcher and the Nigerian speakers took part. Before presenting the Nigerians' utterances to the listeners, the researcher's own speech was erased from the tape and means found to test the stress and intonation patterns of the speakers. The test, as presented to the listeners, is shown below. Again, for convenience, the correct answers are indicated here, although, of course, these were not available to the listeners. The test was as follows:

TEST IVA

SPEAKER NO.: LISTENER NO.:

Indicate by a tick in the appropriate bracket whether you think the following words on the tape could have 'to' or 'the' placed in front of them.

1.	record	(√) to	( ) the
2.	survey	( ) to	(√) the
3.	object	(√) to	( ) the
4.	contrast	( ) to	(√) the
5.	progress	( ) to	(√) the
6.	transport	(√) to	( ) the

Indicate by a tick in the appropriate bracket which question you think the speaker on the tape is answering. If you are not sure, leave blank.

7. ( ) a. Did John cycle to London?
   ( ) b. Did Bill motor to London?
   (√) c. Did John motor to Manchester?

   No, John motored to London.

8. ( ) a. Did John cycle to London?
   (√) b. Did Bill motor to London?
   ( ) c. Did John motor to Manchester?

   No, John motored to London.

9. (√) a. Did John cycle to London?
   ( ) b. Did Bill motor to London?
   ( ) c. Did John motor to Manchester?

   No, John motored to London.

10. ( ) a. Is the green book on the table?
    (√) b. Is the red book on the floor?
    ( ) c. Is the green magazine on the floor?

    No, the green book is on the floor.

11. (√) a. Is the green book on the table?
    ( ) b. Is the red book on the floor?
    ( ) c. Is the green magazine on the floor?

    No, the green book is on the floor.

12. ( ) a. Is the green book on the table?
    ( ) b. Is the red book on the floor?
    (√) c. Is the green magazine on the floor?

    No, the green book is on the floor.

TEST IVA (continued)

Indicate by a tick in the appropriate bracket which statement you think the speaker on the tape is contradicting. If you are not sure, leave blank.

13. ( ) a. Guyana is in West Africa
(√) b. Ghana is in North Africa
( ) c. Ghana is in West Asia

No, Ghana is in West Africa

14. ( ) a. Guyana is in West Africa
( ) b. Ghana is in North Africa
(√) c. Ghana is in West Asia

No, Ghana is in West Africa

15. (√) a. Guyana is in West Africa
( ) b. Ghana is in North Africa
( ) c. Ghana is in West Asia

No, Ghana is in West Africa

16. (√) a. Today is Wednesday, February 7th
( ) b. Today is Wednesday, March 8th
( ) c. Today is Thursday, March 7th

No, it's Wednesday, March 7th

17. ( ) a. Today is Wednesday, February 7th
( ) b. Today is Wednesday, March 8th
(√) c. Today is Thursday, March 7th

No, it's Wednesday, March 7th

18. ( ) a. Today is Wednesday, February 7th
(√) b. Today is Wednesday, March 8th
( ) c. Today is Thursday, March 7th

No, it's Wednesday, March 7th

19. ( ) a. This year is 1967.
( ) b. This year is 1868. No, it's 1968.
(√) c. This year is 1978.

20. (√) a. This year is 1967.
( ) b. This year is 1868. No, it's 1968.
( ) c. This year is 1978.

21. ( ) a. This year is 1967.
(√) b. This year is 1868. No, it's 1968.
( ) c. This year is 1978.

TEST IVB

Indicate by a tick in the appropriate bracket which attitude you think the speaker is conveying. If you are not sure, leave blank.

22. This is ( ) a. an incomplete statement
(✓) b. a completed statement
( ) c. a question

I'm going home tomorrow

23. This is ( ) a. an incomplete statement
( ) b. a completed statement
(✓) c. a question

I'm going home tomorrow

24. This is (✓) a. a matter-of-fact question
( ) b. an angry question
( ) c. a surprised question

What are you going to do?

25. This is ( ) a. a matter-of-fact question
( ) b. an angry question
(✓) c. a surprised question

What are you going to do?

26. This indicates
( ) a. an incomplete list of choices
( ) b. a reluctant offer
(✓) c. a complete list of choices

Would you like orange or lime or lemon?

27. This indicates
(✓) a. an incomplete list of choices
( ) b. a reluctant offer
( ) c. a complete list of choices

Would you like orange or lime or lemon?

28. This is ( ) a. a statement with reservations
(✓) b. a positive statement
( ) c. a question

She's very pretty.

29. This is (✓) a. a statement with reservations
( ) b. a positive statement
( ) c. a question

She's very pretty

30. This is ( ) a. an irritated question
( ) b. a surprised question
(✓) c. a matter-of-fact question

Are you going to see him tonight?

TEST IVB (continued)

31. This is ( ) a. an irritated question
(√) b. a surprised question
( ) c. a matter-of-fact question

Are you going to see him tonight?

32. This indicates
( ) a. qualified agreement
(√) b. full agreement
( ) c. a question requiring an answer

Yes, he is, isn't he?

33. This indicates
( ) a. qualified agreement
(√) b. full agreement
( ) c. a question requiring an answer

No, he isn't, is he?

In the part of the test involving word stress (Nos. 1 - 5) listeners were asked whether the words re'cord, 'survey could have 'to' or 'the' placed in front of them. Informal pilot tests showed however that a number of listeners did not understand what was required of them. When asked to indicate whether the words in question were verbs or nouns, they had no further difficulty. In all listening sessions thereafter the researcher amplified the instructions on the answer sheet by explaining the example 'export, ex'port in grammatical terms.

Numbers 7 - 21 (sentence stress) presented no difficulty to listeners once the possible answers to 7a, b, c had been illustrated in RP terms. The difficulty lay in trying to interpret the Nigerian speakers, who, as will be explained in a later chapter, tended to give an unvaried response whatever the question asked them by the researcher.

Each of the sentences was played back separately, with a 3 - 4 second pause between each sentence.

In the attitude and intonation test - numbers 22-33 - listeners were asked to indicate which attitude they thought the speaker was trying to convey. Before this test was administered, it was explained that the term

'attitude' was an elastic one that also included the notion of completeness and incompleteness, agreement and disagreement, as well as the more conventional meaning of that term.

As before, each of the sentences was played back separately, with a 3-4 second pause between each.

7.6.5 Listening to the RP speaker

All the listeners were required to listen to an RP speaker on tape performing a shortened version of the tests given to the Nigerian speakers. Although they were not aware of it at the time, the RP speaker's tests were in fact tests of the listeners' ability to listen accurately. It was decided that if any listener made more than one error in any of the three parts of the RP tests, he was not a competent listener and was later rejected. Eighteen listeners were rejected on these grounds and further listeners substituted.

The RP tests were played back in the same way as with the Nigerian speakers,unit by unit in the case of connected speech, sentence by sentence in the case of tests of phonemes, stress and intonation. A short reading passage recorded by the RP speaker was not used, as it was found in the pilot tests that it tended to make the listening sessions too long. The RP speaker's version of the tests was as follows:

Test I

> Yes, well for our holiday this year we went to France./ We went by boat and of course our great fear was/ that it was going to be a stormy day/ but fortunately when we got to Dover it was absolutely clear,/ the sky was clear, the sun was shining/ and we had no trouble at all./
>
> Now this was a complete contrast with the time when we went by air/ because we went overnight, we got to the airport/ and I always remember we'd just got there,/ the sky clouded over and there was a most enormous thunderstorm./

RP SPEAKER

TEST III

1.	( ) heat	(√) hit	I want you to.....the glass.
2.	( ) boss	(√) bus	Has the.....arrived yet?
3.	( ) fast	(√) first	The.....train leaves at 6 o'clock.
4.	( ) cot	(√) coat	Our baby has a pink.....
5.	(√) rare	( ) rear	Don't shoot that.....animal.
6.	( ) washing	(√) watching	She was.....the baby.
7.	( ) sudden	(√) southern	The.....wind made the ship move.
8.	( ) hit	(√) hid	This is what he.....
9.	( ) axed	(√) asked	They.....him as soon as he came in
10.	( ) walk	(√) walked	They.....home every day.

TEST IVA

1.	record	(√) to	( ) the
2.	progress	( ) to	(√) the

3. ( ) a. Did John cycle to London?
   ( ) b. Did Bill motor to London?
   (√) c. Did John motor to Manchester?

   No, John motored to London.

4. ( ) a. Did John cycle to London?
   (√) b. Did Bill motor to London?
   ( ) c. Did John motor to Manchester?

   No, John motored to London.

5. (√) a. Did John cycle to London?
   ( ) b. Did Bill motor to London?
   ( ) c. Did John motor to Manchester?

   No, John motored to London.

6. ( ) a. This year is 1967.
   ( ) b. This year is 1868. No, it's 1968.
   (√) c. This year is 1978.

7. (√) a. This year is 1967.
   ( ) b. This year is 1868. No, it's 1968.
   ( ) c. This year is 1978.

8. ( ) a. This year is 1967.
   (√) b. This year is 1868. No, it's 1968.
   ( ) c. This year is 1978.

TEST IVB

9. This is ( ) a. an incomplete statement
   (√) b. a completed statement
   ( ) c. a question

   I'm going hometomorrow

10. This is ( ) a. a matter-of-fact question
( ) b. an angry question
(√) c. a surprised question

What are you going to do?

11. This is (√) a. a statement with reservations
( ) b. a positive statement
( ) c. a question

She's very pretty.

12. This indicates
( ) a. qualified agreement
(√) b. full agreement
( ) c, a question requiring an answer

Yes, he is, isn't he?

7.7 Order of tests

Tests were presented to all of the 240 acceptable listeners in the following order:

Test I - Connected Speech
II - Reading Passage
III - Phonemes
IVA - Stress
IVB - Intonation
RP - Shortened version of Tests I, III, IVA, IVB

In this way the listeners were first introduced to connected speech, in the form of spontaneous speech and a reading passage, followed by tests aimed at isolating specific aspects of English, namely, its phonemes, stress and intonation. It is probable that listeners attuned themselves to a particular speaker's pronunciation as the tests proceeded, but this was inevitable and would, in any case, occur in a normal speech situation. Connected speech, coming first, sets the phonemic pattern for the listener and probably enabled higher scores to be reached than if Tests III and IV preceded I and II. It was necessary to present the RP tests at the end of each session as the RP speaker was, with the exception of Test 1, using the same sentences as those presented to the Nigerian speakers. If listeners had heard the RP speaker first, this would have aided them in interpreting the Nigerian speakers' utterances.

Each listener took part in one listening session only. In this way the possibility of 'learning' through increasing familiarisation with Nigerian speakers was kept to a minimum. The allocation of listeners to speakers was done on a random basis, and is shown in Appendix V. Each session lasted approximately one hour. No listener complained of strain or loss of concentration.

CHAPTER 8

Scoring Procedures and Intelligibility Scores

8.1 Introduction

In Chapter 7.6 it was stated that for all the tests listeners produced a written response, which provided a permanent record for comparison and analysis. The listeners' responses were compared to the original text and from the two versions it was possible to ascertain where intelligibility had broken down.

It was necessary to devise a scoring system in order to measure the intelligibility of the individual speakers, to compare speakers one with another, to compare them with the RP norm and to make general statements, by statistical means, of both speaker and listener performance.

In the sections that follow an explanation of the scoring procedures for each of the tests is given. Before being finally adopted, informal pilot tests were carried out using four speakers and eight listeners. These informal tests were scored on the lines outlined below, and as they appeared to discriminate effectively between good and poor speakers, the same scoring procedure was adopted for all 24 speakers and 240 listeners.

8.2 Scoring Test I - Connected speech

As explained in Chapter 7.6.1 the speakers' texts were divided up into units of approximately 9 or 10 words, based as far as possible on sense groups, before being presented to listeners to write down. These units were later used as the basis for calculating the intelligibility scores for connected speech. A correctly written response had to contain all the key content and structural words giving meaning to a particular unit. Hesitation phenomena (such as 'you see', 'I mean', 'Well', etc.) were ignored. A unit was marked as incorrect if an important element was misinterpreted by the listener. In other words, a unit was marked as either correct or incorrect. There were no partial scores.

Examples of units marked as incorrect follow:

Speaker Y1: /from stories I have heard from people/
Listener L1: /from stories I have had from people/

Speaker H2: /and if the marriage took place there would be unrest/
Listener L19: /and if the marriage took less they would be angered/

Speaker Y6: /and I don't think it is convenient for people to stay three in a room/
Listener L93: /I.....three...../

It might be objected that this system favoured the poorer speakers, in that the score was nil whether one key word only was misunderstood or whether the whole unit could not be comprehended. However it was considered that if partial scores of one third or one half per unit were given, too many subjective judgements would have to be made by the researcher, and there would be the danger of inconsistency in scoring. In fact, however, though in the case of an individual listener the scoring system favoured the poor speaker, it was found that the mean score over ten listeners reflected gradations of intelligibility more exactly. This was because a majority of listeners correctly interpreted the unit above spoken by Y1, so his mean score was higher than in the case of Y6, where almost all listeners failed to understand some part of the unit given as an example above.

Even with the scoring system adopted, there were occasions when ad hoc judgements had to be made as to whether a unit was correctly interpreted or not. In general, minor tense changes and substitution of one determiner by another were not considered incorrect, provided the meaning of the unit as a whole was not affected. Examples of units marked as correct follow:

Speaker H4: /Because I had already known the place/
Listener L73: /because I have already known the place/

Speaker Y8: /the parents of the man hoping to marry looks for the wife for that man/
Listener L156: /the parents of the man hoping to marry look for a wife for that man/

(It will be noted that in the last example the listener also 'corrected' the verb form. This happened on a number of occasions and in such cases, the unit was marked as correct, as the listener had understood the speaker's meaning.)

To calculate the score of a particular speaker with a particular listener, the number of correct units out of the total number of units was percentaged up. Thus, Speaker Y4, whose text consisted of 36 units, conveyed 27 units correctly to Listener L137 and 32 units to L138, giving a final score of 75% and 89% respectively. As each speaker was rated by 10 listeners, the speaker's final score was the mean of all ten listeners' scores.

8.3 Scoring Test II - Reading passages

The reading passages, like the connected speech passages, were divided up into scoring units, and each unit was treated as a whole. As with the connected speech passages, a unit was marked as correct or incorrect, and no partial scores were allowed. As the passages were read, with none of the repetitions and hesitations characteristic of impromptu speech, the listeners' written responses were more strictly marked and minor deviations from the original text were disallowed. The number of correctly reproduced units represented the score, which was then percentaged up.

8.4 Scoring Test III - Phonemes

The scoring procedure for this test presented little difficulty as listeners' responses, recorded on the form reproduced in Chapter 7.6.3, were either correct or incorrect. Their scores - with a maximum possible of 48 - were then converted into a percentage.

8.5 Scoring Tests IVA and IVB - Stress and intonation

Again, this presented little difficulty as listeners' responses were either correct or incorrect. As has been explained in Chapter 5.4, these tests were originally presented to the listeners as one test, but because of the marked

difference in speaker performance in each part of the test it was finally decided to score the two halves of the test as two distinct tests. Questions 1 - 21 (Word and Sentence Stress) of the form reproduced in Chapter 7.6.4 formed Test IVA; Questions 22 - 33 (Intonation) formed Test IVB. In each case, the listeners' correct scores were percentaged.

8.6 Scoring the RP speaker

Listeners' responses to Test I - Connected Speech - and to Tests III, IVA and IVB, recorded on the form reproduced in Chapter 7.6.5, were marked in a similar fashion to the Nigerian speakers, and the results converted into a percentage score. In the case of the RP speaker, however, Tests IVA and IVB were scored as one test, in view of the limited number of items in each part.

8.7 The Intelligibility scores

The scoring procedures detailed above were consistently applied when marking all the tests. Fractions of $\frac{1}{2}$ and over were raised to the next whole number in calculating percentages, while fractions under $\frac{1}{2}$ were discounted.

The intelligibility scores obtained in all the tests are shown in the tables that follow. The interpretation of these scores is discussed in Chapter 9.

The tables are presented in the following order:

Table 8.1.1	Mean Intelligibility Scores - Yoruba Speakers
Table 8.1.2	Mean Intelligibility Scores - Hausa Speakers
Table 8.2	Mean Intelligibility Scores - Rank Order
Table 8.3.1 - 8.3.24	Intelligibility Scores, individual speakers
Table 8.4.1	Intelligibility Scores - RP speaker
Table 8.4.2	Intelligibility Scores, RP speaker/ rejected listeners

Table 8.1.1 Mean Intelligibility Scores (%)

Yoruba Speakers

Speaker No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVA Stress	Test IVB Intonation
Y1	64.2	67.7	69.7	48.3	50.8
Y2	82.5	76.6	77.0	40.3	51.5
Y3	31.3	45.2	66.1	32.7	64.0
Y4	83.4	96.0	76.2	46.7	78.1
Y5	55.4	54.7	72.7	46.3	62.5
Y6	29.9	60.1	85.8	35.1	51.7
Y7	61.6	71.3	70.2	35.0	50.8
Y8	63.6	72.0	69.1	42.3	66.7
Y9	56.2	42.5	62.3	27.6	29.1
Y10	40.7	58.7	73.0	32.7	56.8
Y11	71.9	60.3	74.5	33.6	63.3
Y12	45.5	39.7	67.3	36.2	59.8
Mean	57.1	62.1	72.0	38.1	57.1
S.D.	17.79	16.00	6.09	6.60	11.98

Table 8.1.2 Mean Intelligibility Scores (%)

Hausa Speakers

Speaker No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVA Stress	Test IVB Intonation
H1	65.9	63.3	71.8	47.0	75.8
H2	72.6	42.6	75.0	38.6	61.8
H3	86.2	79.3	83.6	57.5	81.5
H4	75.6	81.1	80.3	39.0	68.4
H5	84.0	73.0	92.3	44.8	65.0
H6	92.7	81.9	85.8	52.8	62.6
H7	48.4	87.6	83.2	42.3	59.1
H8	66.6	66.7	79.0	39.0	65.9
H9	71.6	76.6	82.5	38.0	49.0
H10	81.2	71.2	80.8	36.2	48.3
H11	42.8	39.0	78.0	33.3	49.0
H12	72.8	65.6	76.2	43.3	69.9
Mean	71.7	69.0	80.7	42.7	63.0
S.D.	14.60	15.04	5.40	7.02	10.53

Table 8.2 Mean Intelligibility Scores (%)

Rank Order based on Test I

Speaker No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVA Stress	Test IVB Intonation
H6	92.7	81.9	85.8	52.8	62.6
H3	86.2	79.3	83.6	57.5	81.5
H5	84.0	73.0	92.3	44.8	65.0
Y4	83.4	96.0	76.2	46.7	78.1
Y2	82.5	76.6	77.0	40.3	51.5
H10	81.2	71.2	80.8	36.2	48.3
H4	75.6	81.1	80.3	39.0	68.4
H12	72.8	65.6	76.2	43.3	69.9
H2	72.6	42.6	75.0	38.6	61.8
Y11	71.9	60.3	74.5	33.6	63.3
H9	71.6	76.6	82.5	38.0	49.0
H8	66.6	66.7	79.0	39.0	65.9
H1	65.9	63.3	71.8	47.0	75.8
Y1	64.2	67.7	69.7	48.3	50.8
Y8	63.6	72.0	69.1	42.3	66.7
Y7	61.6	71.3	70.2	35.0	50.8
Y9	56.2	42.5	62.3	27.6	29.1
Y5	55.4	54.7	72.7	46.3	62.5
H7	48.4	87.6	83.2	42.3	59.1
Y12	45.5	39.7	67.3	36.2	59.8
H11	42.8	39.0	78.0	33.3	49.0
Y10	40.7	58.7	73.0	32.7	56.8
Y3	31.3	45.2	66.1	32.7	64.0
Y6	29.9	60.1	85.8	35.1	51.7
Mean	64.4	65.9	76.4	40.4	60.1
S.D.	17.4	14.2	7.0	6.6	10.6

Table 8.3.1

Intelligibility Scores (%)

Speaker No. Y1

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L1	70	78	83	57	42
L2	63	55	67	43	58
L2	78	89	73	48	33
L4	70	78	73	43	50
L214	38	67	67	57	67
L215	77	78	77	48	58
L216	45	55	69	48	42
L217	70	44	52	43	50
L218	68	78	71	48	25
L219	63	55	65	48	83
Mean	64.2	67.7	69.7	48.3	50.8
S.D.	13.03	14.62	8.19	5.12	16.80

Table 8.3.2

Intelligibility Scores (%)

Speaker No. Y2

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L11	75	64	71	33	58
L12	81	91	81	28	33
L13	86	55	73	52	33
L14	86	82	79	38	58
L15	86	91	77	43	50
L16	83	82	75	33	58
L17	81	82	71	43	33
L18	86	73	81	38	50
L190	89	82	79	57	75
L237	72	64	83	38	67
Mean	82.5	76.6	77.0	40.3	51.5
S.D.	5.40	12.15	4.32	8.85	14.72

Table 8.3.3

Intelligibility Scores (%)

Speaker No. Y3

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L30	14	36	67	38	83
L31	34	45	67	48	58
L32	37	45	62	33	58
L33	31	55	67	24	50
L34	29	45	67	28	58
L35	40	55	62	24	58
L36	31	45	67	52	75
L143	26	36	60	28	67
L144	40	45	71	24	58
L145	31	45	71	28	75
Mean	31.3	45.2	66.1	32.7	64.0
S.D.	7.63	6.34	3.70	10.15	10.48

Table 8.3.4

Intelligibility Scores (%)

Speaker No. Y4

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L41	86	89	79	57	83
L42	83	100	69	57	75
L43	92	89	75	48	83
L44	81	100	73	57	67
L45	83	100	75	43	83
L135	81	100	77	33	83
L136	83	89	75	48	50
L137	75	100	75	48	83
L138	89	100	79	33	75
L139	81	100	85	43	100
Mean	83.4	96.0	76.2	46.7	78.1
S.D.	4.72	4.83	4.24	8.98	12.86

Table 8.3.5

Intelligibility Scores (%)

Speaker No. Y5

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L83	64	45	71	38	25
L84	42	55	75	48	67
L85	64	55	69	43	67
L86	58	55	79	52	58
L87	61	64	73	43	67
L88	47	45	77	48	83
L89	56	55	71	57	58
L90	53	55	77	48	83
L91	53	45	73	43	50
L92	56	73	62	43	67
Mean	55.4	54.7	72.7	46.3	62.5
S.D.	7.06	8.84	4.90	5.46	16.75

Table 8.3.6

Intelligibility Scores (%)

Speaker No. Y6

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L93	31	64	85	43	67
L94	37	82	92	33	67
L95	37	64	85	19	33
L96	9	36	83	33	42
L97	46	73	92	38	58
L98	34	73	85	38	50
L99	37	45	87	43	67
L100	31	55	83	28	33
L220	23	64	83	24	50
L221	14	45	83	52	50
Mean	29.9	60.1	85.8	35.1	51.7
S.D.	11.39	14.61	3.52	9.83	13.10

Table 8.3.7

Intelligibility Scores (%)

Speaker No. Y7

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L161	64	55	71	38	50
L162	61	78	71	28	58
L163	59	67	67	28	42
L164	64	67	69	43	67
L165	61	78	69	48	58
L166	69	78	71	43	58
L171	61	67	71	33	50
L172	72	67	75	28	50
L173	51	78	71	28	58
L174	54	78	67	33	17
Mean	61.6	71.3	70.2	35.0	50.8
S.D.	6.26	7.92	2.35	7.53	13.71

Table 8.3.8

Intelligibility Scores (%)

Speaker No. Y8

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L133	79	82	67	38	58
L134	53	64	71	33	58
L155	53	91	65	52	67
L156	59	64	62	28	67
L157	81	91	73	33	75
L232	71	73	73	43	75
L233	66	64	71	48	58
L234	55	73	69	43	67
L235	53	73	71	57	75
L236	66	45	69	48	67
Mean	63.6	72.0	69.1	42.3	66.7
S.D.	10.74	13.93	3.54	9.26	6.95

Table 8.3.9

Intelligibility Scores (%)

Speaker No. Y9

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L127	50	36	56	43	25
L128	67	55	69	24	33
L129	58	36	65	38	42
L130	58	36	52	28	0
L208	50	45	67	24	33
L209	58	45	60	28	33
L210	58	36	56	19	25
L211	61	55	69	24	42
L212	47	36	67	24	33
L213	55	45	62	24	25
Mean	56.2	42.5	62.3	27.6	29.1
S.D.	5.92	7.76	6.07	7.34	11.98

Table 8.3.10

Intelligibility Scores (%)

Speaker No. Y10

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L106	47	78	77	24	42
L107	30	55	75	38	25
L108	44	44	65	43	50
L109	28	44	75	38	42
L175	50	67	71	24	75
L176	44	67	69	28	50
L177	39	55	73	33	67
L178	39	67	77	33	83
L179	39	55	73	33	67
L150	47	55	75	33	67
Mean	40.7	58.7	73.0	32.7	56.8
S.D.	7.24	10.88	3.77	6.11	17.86

Table 8.3.11

Intelligibility Scores (%)

Speaker No. Y11

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L101	72	64	73	38	75
L102	59	45	75	24	75
L103	80	64	77	43	50
L104	72	64	79	28	67
L105	80	73	75	43	67
L227	75	73	79	33	58
L228	59	55	62	38	75
L229	74	55	73	28	58
L230	74	55	77	33	58
L231	74	55	75	28	50
Mean	71.9	60.3	74.5	33.6	63.3
S.D.	7.36	8.88	4.88	6.69	9.87

Table 8.3.12

Intelligibility Scores (%)

Speaker No.Y12

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L76	43	36	69	24	83
L77	43	27	58	38	33
L78	48	36	65	48	67
L79	38	36	65	38	50
L80	50	36	69	48	83
L81	55	55	69	28	33
L82	55	45	71	38	58
L238	45	45	65	24	58
L239	40	45	69	38	83
L240	38	36	73	38	50
Mean	45.5	39.7	67.3	36.2	59.8
S.D.	6.35	7.80	4.22	8.56	19.15

Table 8.3.13

Intelligibility Scores (%)

Speaker No. H1

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L5	78	78	71	52	83
L6	75	55	71	33	92
L7	81	89	69	48	58
L8	81	78	69	33	58
L9	69	67	71	48	83
L10	50	67	79	28	83
L181	69	78	73	67	67
L182	44	44	75	57	75
L183	59	33	69	52	67
L184	53	33	71	52	92
Mean	65.9	66.3	71.8	47.0	75.8
S.D.	13.54	18.46	3.16	12.16	12.78

Table 8.3.14

Intelligibility Scores (%)

Speaker No. H2

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L19	72	45	71	33	50
L20	72	45	77	43	75
L21	75	36	81	48	50
L37	78	55	69	24	67
L38	67	73	81	38	58
L39	61	36	69	38	67
L40	75	64	73	38	67
L140	75	27	75	38	67
L141	81	27	83	38	50
L142	70	18	71	48	67
Mean	72.6	42.6	75.0	38.6	61.8
S.D.	5.68	17.40	5.25	7.01	9.08

Table 8.3.15

Intelligibility Scores (%)

Speaker No. H3

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L22	87	73	81	62	92
L23	81	73	77	52	83
L24	90	82	83	52	83
L25	84	73	83	57	83
L26	84	82	85	62	83
L27	87	82	85	57	83
L28	92	82	83	62	92
L29	81	82	87	62	83
L131	84	82	85	52	58
L132	92	82	87	57	75
Mean	86.2	79.3	83.6	57.5	81.5
S.D.	4.10	4.35	2.99	4.38	9.59

Table 8.3.16

Intelligibility Scores (%)

Speaker No. H4

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L70	65	78	81	33	83
L71	77	89	90	28	58
L72	75	100	77	43	67
L73	70	78	75	43	75
L74	60	67	83	43	75
L75	65	67	77	38	75
L146	90	89	83	43	50
L147	85	100	79	38	67
L148	87	78	73	38	67
L149	82	67	85	43	67
Mean	75.6	81.8	80.3	39.0	68.4
S.D.	10.37	12.43	5.12	5.16	9.42

Table 8.3.17

Intelligibility Scores (%)

Speaker No. H5

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L60	83	73	92	48	67
L61	85	82	92	38	75
L62	81	73	85	48	42
L63	77	64	96	52	58
L65	85	64	94	52	50
L65	87	82	100	48	67
L66	85	64	94	38	83
L67	87	73	90	33	75
L68	83	73	87	43	75
L69	87	82	94	48	58
Mean	84.0	73.0	92.3	44.8	65.0
S.D.	3.16	7.35	4.14	6.49	12.84

Table 8.3.18

Intelligibility Scores (%)

Speaker No. H6

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L110	92	73	83	52	50
L111	97	82	94	57	75
L112	95	91	87	52	67
L113	95	100	90	62	75
L114	92	82	81	57	42
L115	97	82	87	48	58
L116	97	82	85	57	67
L117	82	73	81	38	67
L118	85	82	85	57	50
L119	95	73	85	48	75
Mean	92.7	81.9	85.8	52.8	62.6
S.D.	5.23	8.25	4.00	6.84	11.94

Table 8.3.19

Intelligibility Scores (%)

Speaker No. H7

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L120	39	78	81	38	58
L121	47	89	81	33	67
L122	57	100	87	33	58
L123	55	89	83	52	67
L124	42	78	79	48	58
L125	53	89	85	57	67
L126	45	67	81	48	58
L152	59	100	87	33	50
L153	53	100	83	38	50
L154	34	89	85	43	58
Mean	48.4	87.6	83.2	42.3	59.1
S.D.	8.32	10.57	2.74	8.64	6.32

Table 8.3.20

Intelligibility Scores (%)

Speaker No. H8

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L150	50	73	83	43	42
L151	53	64	77	38	42
L158	70	73	75	33	67
L159	82	73	79	24	58
L160	68	82	79	52	67
L222	73	64	75	43	75
L223	62	64	75	48	75
L224	53	55	87	38	83
L225	82	55	87	28	75
L226	73	64	73	43	75
Mean	66.6	66.7	79.0	39.0	65.9
S.D.	11.72	8.54	5.08	8.71	14.26

Table 8.3.21

Intelligibility Scores (%)

Speaker No. H9

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L46	78	82	87	43	75
L47	66	91	90	38	75
L48	78	91	87	48	33
L49	66	73	87	33	50
L50	81	82	75	43	33
L185	56	73	79	33	42
L186	66	64	87	38	33
L187	72	73	81	28	58
L188	72	73	77	38	33
L189	81	64	75	38	58
Mean	71.6	76.6	82.5	38.0	49.0
S.D.	8.14	9.67	5.72	5.77	16.96

Table 8.3.22

Intelligibility Scores (%)

Speaker No. H10

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L167	83	55	77	48	33
L168	83	78	77	48	58
L169	83	67	81	33	75
L170	74	55	85	48	50
L197	80	67	75	19	17
L198	83	89	85	33	33
L199	80	67	83	43	50
L200	83	78	79	28	42
L201	80	78	85	24	58
L202	83	78	81	38	67
Mean	81.2	71.2	80.8	36.2	48.3
S.D.	2.90	10.95	3.71	10.54	17.46

Table 8.3.23

Intelligibility Scores (%)

Speaker No. H11

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L55	41	55	73	52	33
L56	50	45	75	24	58
L57	28	27	83	24	50
L58	44	18	75	38	25
L59	22	18	73	19	75
L203	59	36	85	24	58
L204	59	36	67	48	58
L205	47	55	83	38	67
L206	34	45	85	38	33
L207	44	55	81	28	33
Mean	42.8	39.0	78.0	33.3	49.0
S.D.	12.15	14.47	6.20	11.18	16.96

Table 8.3.24

Intelligibility Scores (%)

Speaker No. H12

Listener No.	Test I Connected Speech	Test II Reading	Test III Phonemes	Test IVa Stress	Test IVb Intonation
L51	60	36	77	43	75
L52	77	73	71	43	67
L53	69	73	75	43	83
L54	71	45	73	38	75
L191	77	64	81	24	58
L192	77	73	81	38	58
L193	71	82	73	57	83
L194	83	64	77	52	67
L195	74	82	77	52	58
L196	69	64	77	43	75
Mean	72.8	65.6	76.2	43.3	69.9
S.D.	6.30	14.95	3.29	9.24	9.79

Table 8.4.1 Intelligibility Scores (%)

RP Speaker

Listener No.	Test I Connected Speech	Test III Phonemes	Test IVA and IVB Stress and Intonation
L1	100	90	100
2	100	90	100
3	100	100	100
4	100	100	100
5	100	90	100
6	90	100	100
7	100	90	100
8	90	100	100
9	100	100	93
10	100	90	100
11	100	90	100
12	90	100	100
13	100	100	93
14	100	100	100
15	100	100	100
16	100	100	100
17	100	100	100
18	100	100	100
19	90	100	93
20	100	100	100
21	100	100	100
22	100	100	100
23	100	100	93
24	100	100	100
25	100	100	100
26	100	100	100
27	100	100	100
28	100	100	100
29	100	100	100
30	100	100	100
31	100	100	100
32	100	100	100
33	100	100	100
34	100	100	100
35	100	100	100
36	100	100	100
37	100	100	100
38	100	100	100
39	100	90	100
40	100	100	100
41	100	100	100
42	100	100	93
43	100	100	100
44	100	100	100
45	100	100	100
46	100	90	100
47	100	100	100
48	100	100	100
49	100	100	100
50	100	90	100

(continued)

Table 8.4.1 (continued) Intelligibility Scores (%)

RP Speaker

Listener No.	Test I Connected Speech	Test III Phonemes	Test IVA and IVB Stress and Intonation
L51	100	90	100
52	100	100	100
53	100	90	93
54	100	90	100
55	100	90	100
56	100	100	93
57	100	100	100
58	100	90	100
59	100	100	100
60	90	90	93
61	100	100	100
62	100	100	100
63	100	90	100
64	100	100	100
65	100	90	100
66	100	100	100
67	100	100	100
68	100	90	100
69	100	100	100
70	90	100	100
71	100	100	100
72	100	100	100
73	100	100	100
74	100	100	93
75	100	100	100
76	100	100	93
77	100	100	100
78	100	100	100
79	100	100	100
80	100	100	100
81	100	100	100
82	100	90	100
83	100	100	100
84	100	100	93
85	90	100	100
86	100	100	93
87	100	100	100
88	90	100	100
89	100	100	93
90	100	90	100
91	100	100	100
92	100	100	100
93	100	90	93
94	100	100	93
95	100	100	100
96	100	100	100
97	100	100	100
98	100	100	100
99	90	90	100
100	100	90	100

(continued)

Table 8.4.1 (continued) Intelligibility Scores (%)

RP Speaker

Listener No.	Test I Connected Speech	Test III Phonemes	Test IVA and IVB Stress and Intonation
L101	100	100	100
102	90	100	93
103	100	100	100
104	100	100	100
105	100	100	100
106	100	100	100
107	100	100	93
108	90	100	100
109	100	100	93
110	100	100	93
111	100	100	100
112	100	100	100
113	100	100	100
114	100	100	100
115	100	90	100
116	100	100	100
117	100	100	100
118	90	100	100
119	100	90	100
120	100	100	100
121	100	100	100
122	100	100	100
123	100	100	100
124	100	100	100
125	100	100	100
126	90	100	100
127	100	100	100
128	100	90	100
129	100	100	100
130	100	100	100
131	100	100	100
132	100	100	100
133	100	100	100
134	100	100	100
135	100	100	100
136	100	90	100
137	100	100	100
138	100	100	100
139	100	90	100
140	100	100	100
141	100	100	100
142	100	100	100
143	100	90	100
144	100	90	100
145	100	100	100
146	100	100	100
147	100	100	100
148	100	100	100
149	100	90	100
150	100	100	100

(continued)

Table 8.4.1 (continued) Intelligibility Scores (%)

RP Speaker

Listener No.	Test I Connected Speech	Test III Phonemes	Test IVA and IVB Stress and Intonation
L151	100	90	100
152	100	100	100
153	100	90	100
154	100	100	100
155	100	90	100
156	100	100	100
157	100	100	100
158	100	90	100
159	100	100	93
160	100	90	100
161	100	100	100
162	100	100	100
163	100	100	100
164	100	100	100
165	100	100	100
166	100	90	100
167	100	100	100
168	100	90	100
169	100	100	100
170	100	100	100
171	100	100	100
172	100	100	93
173	100	100	93
174	100	100	100
175	100	100	100
176	100	100	100
177	100	100	100
178	100	100	100
179	100	100	93
180	100	100	100
181	100	90	100
182	100	100	100
183	100	100	100
184	100	100	93
185	100	100	93
186	100	100	93
187	100	90	100
188	100	100	93
189	100	100	100
190	100	100	100
191	100	100	100
192	100	100	100
193	100	100	100
194	100	100	100
195	100	100	93
196	100	100	100
197	100	100	100
198	100	100	100
199	100	100	100
200	100	100	100

(Continued)

Table 8.4.1 (continued) Intelligibility Scores (%)

RP Speaker

Listener No.	Test I Connected Speech	Test III Phonemes	Test IVA and IVB Stress and Intonation
L201	100	100	100
202	100	100	100
203	100	100	100
204	100	100	100
205	100	100	100
206	100	100	93
207	100	100	100
208	90	100	100
209	100	100	93
210	100	100	100
211	100	100	100
212	90	100	100
213	100	100	100
214	100	90	100
215	100	100	100
216	100	100	100
217	100	100	93
218	100	100	100
219	100	100	100
220	100	90	100
221	100	100	100
222	100	100	100
223	100	100	93
224	100	100	100
225	100	100	93
226	100	90	100
227	100	90	100
228	100	100	100
229	100	100	100
230	100	100	100
231	100	90	100
232	100	100	93
233	100	90	100
234	100	100	100
235	100	100	100
236	100	100	100
237	90	100	100
238	100	100	100
239	100	100	100
240	100	100	100
Mean	99.4	98.0	99.0

Table 8.4.2 Intelligibility Scores (%)

RP Speaker/Rejected Listeners

Rejected Listener No.	Test I Connected Speech	Test III Phonemes	Tests IVA and IVB Stress and Intonation
RL 21	80 (2)	100	100
37	100	100	83 (2)
52	100	100	75 (3)
59	100	100	83 (2)
73A	100	100	83 (2)
73B	100	100	83 (2)
77	100	80 (2)	100
82	100	100	75 (3)
96A	100	100	75 (3)
96B	100	100	83 (2)
100	100	100	83 (2)
114	100	100	83 (2)
153	90	100	83 (2)
211	100	100	83 (2)
215	90	100	83 (2)
219	100	100	83 (2)
232A	100	100	83 (2)
232B	100	100	83 (2)

The figures in parentheses indicate the number of errors made by rejected listeners when listening to the RP speaker. It will be seen that 16 out of the 18 rejected listeners made more than one error in Tests IVA and IVB - Stress and Intonation.

CHAPTER 9

Interpretation of Intelligibility Scores

9.1 Introduction

For the purposes of presenting the results the tests are labelled as follows:- Part I - Connected Speech; Part II - Reading Passage (one of three denoted by A, B and C respectively); Part III - Phonemes; Part IVA - Stress in words and sentences; Part IVB - Attitude (as expressed by intonation).

The latter two are denoted by IVA, IVB as they were originally administered as one unit. However both in content and in the response elicited they clearly merited consideration as distinct tests.

Part I is assumed to be the criterion of fundamental importance in assessing the speaker's ability in spoken English. II involves the use of many of the skills required in I, with the exception of the choice of correct lexis and structure; III, IVA and IVB attempt to isolate three of these basic skills. We are interested in the relationships between performances in some or all of these skills and connected speech. The sample of speakers and listeners was drawn in such a manner that, hopefully, the results from these experiments can be confidently extrapolated to the other groups of speakers and listeners of similar backgrounds.

9.2 Mean intelligibility scores (Table 9.1)

Table 9.1 shows the mean intelligibility scores (expressed in percentages) obtained by the speakers in the various tests, together with the average score and the standard deviation among speakers for each test.

There is a wide range in the average intelligibility of educated Nigerian speakers' English. From Table 9.1, column I we see that the scores vary from 92.7% (H6) to 29.9% (Y6), with an average score of 64.4%. The median score is 66.6% (H8). (The averages for Yoruba and Hausa

Table 9.1 Mean Intelligibility Scores (%)

(Averaged over the 10 listeners involved for the particular speaker and test)

Speaker	Test I	II(A)	II(B)	II(C)	III	IVA	IVB
Y 1	64.2	67.7			69.7	48.3	50.8
2	82.5		76.6		77.0	40.3	51.5
3	31.3			45.2	66.1	32.7	64.0
4	83.4	96.0			76.2	46.7	78.1
5	55.4		54.7		72.7	46.3	62.5
6	29.9			60.1	85.8	35.1	51.7
7	61.6	71.3			70.2	35.0	50.8
8	63.6		72.0		69.1	42.3	66.7
9	56.2			42.5	62.3	27.6	29.1
10	40.7	58.7			73.0	32.7	56.8
11	71.9		60.3		74.5	33.6	63.3
12	45.5			39.7	67.3	36.2	59.8
H 1	65.9	63.3			71.8	47.0	75.8
2	72.6		42.6		75.0	38.6	61.8
3	86.2			79.3	83.6	57.5	81.5
4	75.6	81.1			80.3	39.0	68.4
5	84.0		73.0		92.3	44.8	65.0
6	92.7			81.9	85.8	52.8	62.6
7	48.4	87.6			83.2	42.3	59.1
8	66.6		66.7		79.0	39.0	65.9
9	71.6			76.6	82.5	38.0	49.0
10	81.2	71.2			80.8	36.2	48.3
11	42.8		39.0		78.0	33.3	49.0
12	72.8			65.6	76.2	43.3	69.9
Average	64.4	74.6	60.6	61.4	76.4	40.4	60.1
Standard Deviation among speakers	17.4	12.1	13.6	17.0	7.0	6.6	10.6

This table shows the mean intelligibility scores obtained on all tests. The labelling of the tests is as follows:-

(I) Connected speech; (II) Reading passage (either passage A, B or C); (III) Phonemes; (IVA) Stress and (IVB) Attitude and intonation.

speakers are 57.1% and 71.7% respectively). The distribution of scores is fairly symmetrical about the mean/median and it would appear that the sample tested is satisfactorily representative of the population of Nigerian English-speakers of similar background. Using the standard deviation of 17.4 we infer that approximately 95% of educated Nigerians have an average intelligibility of between 30% and 99%, when talking to listeners of similar background to those involved in the experiment.

The scores for the Reading tests (Table 9.1, IIA, B, C) suggest that Passage A was significantly easier than B or C, the latter two having approximately the same order of difficulty. As the different passages were administered to three mutually exclusive groups of speakers, each of varied ability, no useful comments can be made concerning the range of scores. However, the mean score for all three Reading tests is 65.5%, which is not significantly different from the mean score for Connected Speech. This may imply that lexical and structural errors (absent from the reading passages selected) are not a major source of intelligibility failure.

The phoneme scores (Table 9.1, III) are generally high, having a mean of 76.4% and a fairly small range of 92.3% (H5) to 62.3% (Y9). This suggests that the particular skill needed to do well in this test is possessed in large measure by most of the speakers.

The scores for the test of stress (Table 9.1, IVA) are generally low, having a mean score of 40.4% and a range of 57.5% (H3) to 27.6% (Y9). On the other hand, the scores for the test of attitude (intonation) were markedly higher, with a mean of 60.1% and a range of 81.5% (H3) to 21.9% (Y9). One can infer from these scores that Nigerian speakers of English have considerably more difficulty in accurate handling of the tonic accent, whether in the word or the sentence, than in handling the attitudinal side of intonation.

9.3 Standard deviations of mean intelligibility scores (Table 9.2)

Whereas Table 9.1 shows the mean intelligibility scores and standard deviation among speakers for each test,

Table 9.2 presents the corresponding standard deviation among listeners. It gives a measure of the variability in response of the ten listeners involved for each speaker/ test combination, together with the average of this standard deviation for each test.

It is of interest to compare the standard deviation among listeners with the mean intelligibility scores of the speakers. Shown below are the figures from Column I of Tables 9.1 and 9.2, ranked from highest to lowest on the basis of scores in the first table:-

Speaker	% Score (I)	S.D.
H6	92.7	5.23
H3	86.2	4.10
H5	84.0	3.16
Y4	83.4	4.72
Y2	82.5	5.40
H10	81.2	2.90
H4	75.6	10.37
H12	72.8	6.30
H2	72.6	5.68
Y11	71.9	7.36
H9	71.6	8.14
H8	66.6	11.72
H1	65.9	13.54
Y1	64.2	13.03
Y8	63.6	10.74
Y7	61.6	6.26
Y9	56.2	5.92
Y5	55.4	7.06
H7	48.4	8.32
Y12	45.5	6.35
H11	42.8	12.15
Y10	40.7	7.24
Y3	31.3	7.63
Y6	29.9	11.39

From the above figures it will be seen that, in general, the standard deviations are lower for the upper and lower sections of the ranking and larger in the centre. Listeners tend to agree in their judgement when they hear a good or bad speaker; there is less agreement when the speaker's competence lies between these two extremes.

The range of scores assigned by different listeners on Part I is exemplified as follows:

Speaker	% Score (I)	S.D.	Range (%)
H6	92.7	5.23	97-82
H1	65.9	13.54	81-50
Y1	64.2	13.03	77-38
Y10	40.7	7.24	50-28

Clearly a single speaker can present a very different level of intelligibility to different listeners. This is particularly so in the middle range of speaking ability.

If we now look again at Table 9.2, it will be seen that there was more agreement amongst listeners as to the degree of intelligibility of the connected speech, (Col.I), than there was in the case of the reading passages (Col.II). This can be seen by comparing the low standard deviation of 7.7 in Column I with the higher standard deviations of 11.3, 11.5 and 9.2 in Columns IIA, B, and C. Though in all cases these standard deviations exceed that for connected speech, it is noticeable that there was less disagreement amongst those listeners scoring passage C than amongst those scoring passages A and B. This can probably be accounted for by the fact that Reading passages A and B were assigned to groups containing more "average" readers than the group which read C. It follows from the comments above that we would expect lower standard deviation in the latter group.

The average standard deviation for Test III is low, 4.4, which indicates that the pronunciation of a phoneme elicits considerable agreement among listeners as to its correctness.

Comparing the average standard deviations for Tests IVA and IVB, 8.0 and 13.0 respectively, it will be seen that though speakers scored more highly on the intonation than on the stress, there was more agreement amongst listeners as to whether a word or a sentence was correctly stressed, than on whether an attitude was correctly conveyed. It could be that listeners who have not been phonetically trained found this test the most difficult to score. This is implied by the very high listener variance shown in Table 9.3, and by the fact that the majority of listeners rejected for their performance with the RP speaker failed on this particular aspect of the tests.

Table 9.2 Standard Deviations of Mean Intelligibility Scores

Speaker	Test I	II(A)	II(B)	II(C)	III	IVA	IVB
Y1	13.03	14.62			8.19	5.12	16.80
2	5.40		12.15		4.32	8.85	14.72
3	7.63			6.34	3.70	10.15	10.48
4	4.72	4.83			4.24	8.98	12.86
5	7.06		8.84		4.90	5.46	16.75
6	11.39			14.61	3.52	9.83	13.10
7	6.26	7.92			2.35	7.53	13.71
8	10.74		13.93		3.54	9.26	6.95
9	5.92			7.76	6.07	7.34	11.98
10	7.24	10.88			3.77	6.11	17.86
11	7.36		8.88		4.88	6.69	9.87
12	6.35			7.80	4.22	8.56	19.15
H1	13.54	18.46			3.16	12.16	12.78
2	5.68		17.40		5.25	7.01	9.08
3	4.10			4.35	2.99	4.38	9.59
4	10.37	12.43			5.12	5.16	9.42
5	3.16		7.35		4.14	6.49	12.84
6	5.23			8.25	4.00	6.84	11.94
7	8.32	10.57			2.74	8.64	6.32
8	11.72		8.54		5.08	8.71	14.26
9	8.14			9.67	5.72	5.77	16.96
10	2.90	10.95			3.71	10.54	17.46
11	12.15		14.47		6.20	11.18	16.96
12	6.30			14.95	3.29	9.24	9.79
Average	7.7	11.3	11.5	9.2	4.4	8.0	13.0

This table shows the standard deviations for each speaker and test as well as the average standard deviation for each (sub)-test. This is a measure of the extent to which listeners varied in their response to a particular speaker on a particular test.

9.4 Reliabilities

Table 9.3 shows the reliabilities of the tests considered both for a single listener and for the average of ten listeners. The figures in the last two columns (roughly the squares of the average standard deviations quoted in Tables 9.1 and 9.2 respectively) show the spread of ability among speakers as against the variability in response of listeners. They should be borne in mind when interpreting reliability since the latter is dependent on the heterogeneity of the sample tested. Thus a very heterogeneous sample makes for high reliability and vice versa.

Table 9.3 Reliabilities

Test	RELIABILITY		Listener variance	Speaker Variance
	(single listener)	(Average of ten listeners)		
I	.82	.98	68.41	301.58
IIA	.50	.91	143.19	145.66
IIB	.57	.93	142.24	186.12
IIC	.75	.97	97.35	287.64
III	.70	.96	20.82	49.46
IVA	.39	.86	66.80	43.16
IVB	.38	.86	180.94	112.82

The Table reveals that with the exception of Test I, the reliabilities are unsatisfactory for a single listener. However, when averaged over ten listeners all the tests are adequately reliable.

An interesting point to note is the large difference in reliability (for a single listener) between Tests IIA, IIB and IIC. It will be seen that Reading Passage C was given to a group whose heterogeneity (as measured by "speaker variance") is nearly twice that of A and B, which accounts for the discrepancy. This highlights the importance of considering sample heterogeneity in conjunction with the measure of reliability. By averaging the results, for the ten listeners we could take .94 as representative of the reliability of a reading test averaged over ten listeners.

In Test III it will be seen that reliability based on one listener is fairly high, and we can note once again the small variations in both speaker and listener performance on this test.

In Tests IVA and B reliabilities are low for single listeners, which reflect the large inconsistencies in listeners judgements as compared with variation in ability of the speakers.

9.5 Intercorrelations between tests

Table 9.4

	I	II	III	IVA	IVB
I	1.0	.65	.41*	.59	.33**
II		1.0	.65	.58	.40**
III			1.0	.81	.42*
IVA				1.0	.65
IVB					1.0

Table 9.4 shows the intercorrelations between the various tests and indicates by ** that the value obtained is not significantly different from zero, and by * that it is only just significantly different. A single value for correlations involving II has been obtained by combining values for A, B, and C.

In considering I to be the criterion of fundamental importance, the entries in the first row show the validities of the other tests with respect to this criterion. It will be seen that II has the highest validity, followed by IVA. The validity of III is barely significant and that of IVB is not significant. Standards of performance in Connected Speech and Reading are therefore significantly correlated, and so are Connected Speech and Stress. A further item of particular interest is the high (.81) correlation between standards of performance in III (Phonemes) and IVA (Stress). However, as Tests II, III, IVA and IVB are by no means tests of independent qualities (Reading, for example, contains elements of all the other skills), it is necessary to clarify these dependencies by calculating various partial correlations of interest.

We first examine the effect of eliminating the influence of II (Reading) on the intercorrelations of III, IVA and IVB in order to see if there are other links between them in addition to a common element of reading skill. We obtain:

TESTS	ORDINARY CORRELATION	PARTIAL CORRELATION W.R.T. II
III, IVA	.81	.70
III, IVB	.42	.23**
IVA, IVB	.65	.56

It will be seen that the partial correlation between III and IVA and between IVA and IVB remain significantly large. Thus, in addition to reading skill, there is some other definite link between a speaker's performance in Phonemes and Stress (III and IVA) and between his performance in Stress and Intonation (IVA and IVB). By contrast, the partial correlation of Phoneme pronunciation and Intonation (III and IVB) is low, implying that there is little connection between a speaker's performance in these two tests.

We now examine the relationship of scores in Tests III and IVA to scores in Test I:

TESTS	ORDINARY CORRELATION	PARTIAL CORRELATION
I & IVA W.R.T.III	.59	.48
I & III W.R.T.IVA	.41	-.14**

We note that there is still an association between standards of performance in Connected Speech (Test I) and Stress (Test IVA) even when the effect of Test III, Phonemes, is removed. The association between scores in Tests I and III, Connected Speech and Phonemes, shown by the ordinary correlation of .41, falls to zero when the effect of Test IVA, Stress, is removed. Stress must therefore be an important element both in a listener's judgement of Connected Speech, and in his judgement of the pronunciation of phonemes. The association between standards of

performance in Test I, Connected Speech, and Test III, Phonemes, seems to be due to mutual association with IVA, Stress, but not vice versa.

We now examine the relationship of performance in Tests IVA and IVB to performance in Test I:

TESTS	ORDINARY CORRELATION	PARTIAL CORRELATION
I & IVA W.R.T. IVB	.59	.52
I & IVB W.R.T. IVA	.33**	-.09**

Again there is shown to be a link between standards of performance in Connected Speech and Stress, when the effect of Intonation is removed. The association between I and IVB seems to be due to their mutual association with IVA, Stress, and not vice versa.

Finally, the correlations between I and II are presented when the effects of single skills are removed:

ORDINARY CORRELATION	PARTIAL CORRELATION W.R.T.		
	III	IVA	IVB
.65	.55	.47	.67

Again we see that IVA (Stress) accounts for more of the association than III (Phonemes) and that IVB, Intonation, does not seem to be relevant to the rating of Connected Speech. In fact, by removing the effect of these skills in pairs, or altogether, we cannot reduce the correlation between performance in Connected Speech and Reading below the figure of .47. It may be inferred, therefore, that Reading is not simply the sum total of skills involved in III, IVA and IVB, but involves some other component, perhaps a general intelligence factor not measured by these tests.

9.6 Grading of speakers

On the basis of their intelligibility scores obtained in Test I (Connected Speech), the speakers can be classified in rank order as shown in Table 9.5. Taking the mean score of 64.4% and a standard deviation of 17.4, the speakers fall into four categories as follows:

Table 9.5 Grading of speakers based on Test I (Connected Speech)

	Speakers (in rank order)	Score %	
Category A	H6	92.7	2SD = 99.2%
	H3	86.2	
	H5	84.0	
	Y4	83.4	
	Y2	82.5	
Category B	H10	81.2	1SD = 81.8%
	H4	75.6	
	H12	72.8	
	H2	72.6	
	Y11	71.9	
	H9	71.6	
	H8	66.6	
	H1	65.9	
Category C	Y1	64.2	Mean: 64.4%
	Y8	63.6	
	Y7	61.6	
	Y9	56.2	
	Y5	55.4	
	H7	48.4	
Category D	Y12	45.5	1SD = 47.0%
	H11	42.8	
	Y10	40.7	
	Y3	31.3	
	Y6	29.9	2SD = 29.6%

The mean score on Test I was 64.4%, with a standard deviation of 17.4

	%
Category A	99.2-81.8
Category B	81.8-64.4
Category C	64.4-47.0
Category D	47.0-29.6

Speakers in Categories A and B are above average and those in Categories C and D below average. Thus, 13 or 54% of the speakers scored above the mean and 11 or 46% of the speakers below the mean. It is of particular interest to note that 10 of the 12 Hausa speakers scored above the mean, while 9 of the 12 Yoruba speakers scored below the mean, indicating that Hausa speakers are significantly more intelligible than Yoruba speakers.

9.7 The effect of educational background

In Chapter 6.4.2 the speakers' educational qualifications were given. It will be recalled that their qualifications in written English, at School Certificate level, were not too dissimilar, though the Hausa speakers had achieved rather more Credits or better than the Yoruba speakers. Many more Hausa speakers than Yoruba speakers had taken and done well in the optional English Oral examination. At Higher School Certificate level a similar number had taken English amongst both groups.

Table 9.6 shows the speakers set out in rank order on the basis of their intelligibility scores in Test I, together with their qualifications in English. The speakers have also been grouped into the four categories used in Table 9.5, that is, in bands determined by the standard deviations from the mean.

From this table we can extract the following data:

	WASC English Lang.		WASC Oral English		HSC English	
Above average speakers (Categories A & B)	Distinction	1	Distinction	1	Main	7
	Credit	6	Credit	6	Nil	6
	Pass	6	Pass	3		
			Nil	3		
		13		13		13
Below average speakers (Categories C & D)	Credit	1	Pass	3	Main	3
	Pass	9	Nil	8	Subsidiary	1
	Nil	1			Nil	7
		11		11		11

Table 9.6 Speakers' Rank Order and English Qualifications

Speakers (in rank order)	WASC English Language	WASC Oral Eng.	HSC Eng.
Category A			
H6	Distinction	Credit	Main
H3	Credit	Credit	Main
H5	Pass	Pass	Main
Y4	Credit	Pass	-
Y2	Pass	-	Main
Category B			
H10	Pass	Pass	-
H4	Pass	Credit	Main
H12	Credit	Credit	-
H2	Pass	-	Main
Y11	Credit	-	-
H9	Credit	Credit	-
H8	Pass	Distinction	-
H1	Credit	Credit	Main
Category C			
Y1	Pass	-	Main
Y8	Pass	-	-
Y7	Pass	-	-
Y9	Pass	-	-
Y5	Pass	Pass	Main
H7	Pass	Pass	-
Category D			
Y12	Credit	-	-
H11	-	-	-
Y10	Pass	Pass	-
Y3	Pass	-	Subsidiary
Y6	Pass	-	Main

While it would be unwise to draw definite conclusions about the relationship between performance in English examinations and intelligibility in Connected Speech from these limited data, a few tentative observations are nevertheless put forward here.

First, the above average speakers have better qualifications at Credit and Distinction level in the WASC English Language examination than those speakers who are below average. It can be tentatively suggested that there is some link between performance in this written examination and intelligibility in connected speech. Secondly, the above average speakers have very much better qualifications in Oral English than the below average speakers. However, this is an optional subject. It would require further research to say whether schools who decide to prepare candidates for the Oral English examination thereby improve the intelligibility of their students, or whether schools only put in for this examination those students whose English is already of good standard. Thirdly, at HSC level more of the above average speakers have qualifications at Main level than do the below average speakers, though the proportion of speakers in both groups who have not taken HSC English is substantial.

We now turn to the speakers' experience of, and exposure to, English before entering university. In Chapter 6.4.3 it was noted that the Yoruba speakers began English as a subject at an earlier age than the Hausa speakers (7.25 years as opposed to 9.4 years) and also began using it as a medium earlier (9.6 years and 11.5 years respectively). On the other hand, at secondary level the Hausa speakers had earlier contact with native English teachers than the Yoruba speakers (14.0 years as opposed to 15.0 years) and they also attended schools with a higher proportion of native English speakers on the staff.

Table 9.7 shows the speakers set out in rank order according to their intelligibility scores in Test I, together with their experience of English at school. By grouping the speakers into above average and below average as before we can extract the following data:

Table 9.7 Speakers' Rank Order and School Experience of English

Speakers (in rank order)	Age English begun as a subject	Age English used as a medium	Age first taught by native speaker	Proportion of native speakers on Sec. school staff
Category A				
H6	12	14	16	About half
H3	9	10	14	Most
H5	7	not known	13	Most
Y4	7	10	14	Most
Y2	8	12	14	All or nearly all
Category B				
H10	9	11	14	About half
H4	11	13	15	About half
H12	8	11	13	About half
H2	9	11	14	Most
Y11	7	9	14	Most
H9	11	12	14	About half
H8	10	12	13	Most
H1	10	12	14	All or nearly all
Category C				
Y1	7	8	22	None
Y8	8	11	17	About half
Y7	6	9	13	A few
Y9	6	7	19	A few
Y5	8	10	14	A few
H7	9	11	13	Most
Category D				
Y12	8	10	12	A few
H11	8	10	14	About half
Y10	8	10	15	Most
Y3	8	9	14	About half
Y6	6	9	14	Most

	English begun as a subject	English used as a medium	First taught by native speakers	Proportion of native speakers on sec. school staff
Above average speakers	Mean Age	Mean Age	Mean Age	Mode
Categories A & B	9.0	11.4	14.0	Most
Below average speakers				
Categories C & D	7.5	8.6	15.2	A few

From this it will be seen that the above average speakers began English at primary school 1.5 years later and were introduced to English as a medium 2.8 years later than the below average speakers. At secondary school, on the other hand, the above average speakers were first taught by a native English speaker 1.2 years earlier and most of their teachers were native English speakers.

It would be difficult to draw any definite conclusions from these limited data. It is not possible because three important variables are involved. Firstly, as we have seen, more of the above average speakers were Hausa. Their better performance may not have been due to their teaching, but to less interference from their mother tongue than was the case with the Yoruba speakers. The other two important variables are the age at which English was begun and used as a medium, and the number of native English speakers on the secondary school staff. The above average English speakers tended both to have started English later and to have had more contact with native English speakers at the secondary school stage. Even if we could eliminate the mother tongue variable (which is impossible with the small sample under consideration) we have not enough data to say definitely which of the other two variables is the more significant. There is an implication that the quality of teaching at secondary level is a more important factor in intelligibility than the length of time spent learning English at the primary stage. This may well be the case, since children at primary

school are often exposed to poor models of English by their teachers. The implication that the quality of secondary English teaching is more important than the amount of primary experience with English deserves to be tested by further research, since it has an important bearing on the planning of the primary school curriculum.

9.8 Listeners' Opinion Assessment Scale

In Chapter 4.2 details of the Richards and Swaffield Opinion Assessment Scale Based on Effort were given, and the method used in obtaining the listeners' subjective judgement on each speaker's intelligibility was described in Chapter 7.6.1. It will be recalled that listeners were required to assign a grade A - E according to the amount of effort required to understand a particular speaker in Test I (Connected Speech). The grades were as follows:

A Complete relaxation possible: no effort required
B Attention necessary: no appreciable effort required
C Moderate effort required
D Considerable effort required
E No meaning understood with any feasible effort

Table 9.8 shows the listeners' assessments, with 10 grades assigned to each speaker. The grades were converted to a score as follows: A=10, B=8, C=6, D=4, E=2. Thus, if a speaker was awarded 10 grade A's, his converted score would be 100%. The converted assessment scores were then compared to the speakers' actual scores on Test I (Connected Speech) and the results compared. There was a very close relationship between the two scores, the mean assessment score being 61.0% as against a mean score of 64.5% for Test I. The intercorrelation was .95. These results confirm the reliability of the scoring procedures for Test I and indicate that, averaged over 10 listeners, subjective grading of speakers is a satisfactory form of assessment.

Table 9.8 Listeners' Opinion Scale Based on Effort

Speakers (in rank order)	Listeners' Assessments	Listeners' Assessment Score %	Speakers' Score (to nearest whole number) %
H6	B B B B A A B B B B	84	93
H3	B B C B C C B C B B	72	86
H5	C B B C B C C C B B	70	84
Y4	B B B B C C C B B B	74	83
Y2	B B B B C C C C C C	68	83
H10	B B B C C B B B B B	76	81
H4	C C C C C B B B C C	66	76
H12	C B B D C C B C C B	66	73
H2	C C C B C C B C B C	66	73
Y11	C D C C B B C C C C	62	72
H9	B B C C B C C B C D	66	72
H8	C C C C D C C C B B	62	67
H1	A C C C C D C D D D	56	66
Y1	C C C C C B C C C D	60	64
Y8	C C D C B C B B B C	66	64
Y7	C C C C D B C D C C	58	62
Y9	D C C D C C B B D C	58	56
Y5	C D D C C C D C C C	54	55
H7	D D D D D D D C C D	44	48
Y12	D C E D C B C C C D	52	46
H11	D D D C D C C C C C	52	43
Y10	D D C D D C D D D D	44	41
Y3	D D D D C C D D D D	44	31
Y6	C D D D C D D D D D	44	30
Mean		61.0%	64.5%
S.D.		10.9	17.6
Intercorrelation .95			

A = 10
B = 8
C = 6
D = 4
E = 2

9.9 RP speaker's scores

In the last Chapter, Table 8.4.1 lists the intelligibility scores obtained by the RP speaker with British listeners. The mean score, averaged over 240 listeners for Test I (Connected Speech) was 99.4%. Even amongst those listeners who were rejected because they made more than one error in any of the three parts of the RP tests, only one of the 18 rejected listeners made two errors in the Connected Speech test.

Thus it will be seen that the RP speaker's intelligibility to British listeners was of a high order - nearly 100% total communication in fact. It is perhaps somewhat invidious to make comparisons between the performance of native English speakers and second language English speakers, but a few general observations are of interest. Taking the scores obtained in Test I as a basis, the following comparisons can be made:

	%
RP speaker	99.4
Most intelligible Nigerian speaker (H6)	92.7
Mean of Nigerian speakers	64.4
Least intelligible Nigerian speaker (Y6)	29.9

From this it can be stated that the most intelligible educated Nigerian speaker of English is 93% as efficient as an RP speaker; that the mean educated Nigerian speaker is 65% as efficient, and that the least intelligible educated Nigerian speaker is only 30% as efficient as an RP speaker. Put in more general terms, we can say that the most intelligible educated Nigerian speaker of English is very nearly as intelligible as an RP speaker; that the average educated Nigerian speaker is nearly two-thirds as intelligible, and that the least intelligible educated Nigerian speaker is less than one-third as intelligible as an RP speaker.

9.10 Summary

Educated Nigerian speakers of English vary considerably in intelligibility. Average scores on Connected

Speech range from 92.7% down to 29.9%, with a mean score of 64.4%. Hausa speakers are more intelligible than Yoruba speakers.

The mean score for the Reading tests is not significantly different from the mean score for Connected Speech, 65.5% and 64.4% respectively. Speakers scored highly on the Phoneme tests, with an average of 76.4%. Scores on the test of Stress were generally low, with a mean of 40.4%, whereas in the tests of Intonation the speakers performed markedly better, with a mean of 60.1%. Nigerian speakers of English appear to have more difficulty in producing accurate stress patterns in the word and sentence than they do in conveying the attitudinal side of intonation.

The standard deviations in the listeners' scores reveal that in general they agree more when listening to a good or poor speaker than they do when listening to a speaker of average competence. Turning to individual tests, there was more agreement among listeners as to the degree of intelligibility of Connected Speech than there was in the case of the Reading tests. There was considerable agreement among listeners in the Phoneme tests, less agreement in their judgement of the Stress tests and considerable disagreement on the Intonation tests. The very high listener variance in connection with the Intonation tests (Table 9.3) shows that listeners found this the most difficult to score.

With the exception of the Connected Speech test, the reliabilities are unsatisfactory for a single listener. All the tests are adequately reliable, however, when averaged over ten listeners.

Taking the Connected Speech test as the criterion of fundamental importance, it was seen that standards of performance in Connected Speech are significantly correlated with standards of performance in tests of Reading and of Stress. Partial correlation analysis showed that Stress is highly correlated to Connected Speech, to Reading, to the accurate pronunciation of Phonemes and to a lesser extent, Intonation. Intonation, apart from a close correlation with Stress, does not appear to be significantly linked to the other elements under consideration. The most important conclusion, therefore, from a statistical analysis of the scores, is that Stress is the major component of all aspects of intelligibility.

The speakers were grouped into four categories according to scores obtained in Test I, which revealed that 10 of the 12 Hausa speakers scored above the mean, while 9 of the 12 Yoruba speakers scored below the mean.

The above average speakers had better qualifications at Credit and Distinction level in the WASC English language examination and much better qualifications in Oral English than the below average speakers. More of the above average speakers also had qualifications in English at HSC level. Further research would be needed to determine whether these findings are significant.

The above average speakers began English later and used it as a medium later than the below average speakers at primary school, but at secondary school they had more and earlier contact with native English teachers. It is tentatively suggested that the quality of teaching at secondary level is more important for intelligibility than the length of time spent learning and using English in the primary school.

The listeners' subjective opinions of the speakers' intelligibility correlated closely with the scores obtained on Test I. Averaged over 10 listeners, subjective grading of speakers is a satisfactory form of assessment.

The RP speaker's mean intelligibility score on Test I was 99.4%. The best Nigerian speaker approximated closely to this; the average Nigerian speaker was nearly two-thirds as intelligible and the weakest Nigerian speaker was less than one-third as intelligible as the RP speaker.

In the chapter that follows, an analysis is made of the actual errors that led to a breakdown of intelligibility between the Nigerian speakers and the British listeners. It will be shown that faulty stress and rhythm was the most frequent cause of intelligibility failure, thus reinforcing the conclusions of the statistical analysis.

CHAPTER 10

Intelligibility Failure in Connected Speech

10.1 Methodology

In this chapter all cases where intelligibility failed with two or more listeners in Test I (Connected Speech) are shown. Where only one listener failed to understand a particular utterance, i.e. the nine other listeners understood, the single failure has been discounted for the purposes of this analysis. The method used was to compare the speakers' original version (see Appendix I) with the listeners' written responses. By systematically examining the instances where intelligibility broke down it was possible to record 2,781 cases of intelligibility failure between the Nigerian speakers and the British listeners. Some examples are as follows:

	Speaker's text/word	Listeners' responses
Y1	secondary school	country school school in my country county school
H7	come and queue up	come in the - (3 listeners) come in the queue up (2 listeners) come in the - up
Y12	work	walk (3 listeners)
H2	are occurring	——— (6 listeners) are carried are coming
H5	recent	reasons (3 listeners)
Y6	as well read the books (=read the books as well)	with only the books in so many books as I read the books - books as we read the books

The next task was to establish why intelligibility had broken down. This involved making a phonetic analysis of the key word or words of the speaker's utterance which had caused a breakdown in communication. From this it was possible

to suggest the most likely cause of intelligibility failure. Taking the examples quoted above it will be seen how the conclusions as to the cause of unintelligibility were arrived at:

	Speaker's text/word	Pronunciation of key word(s)	Likely cause of error
Y1	secondary school	[sɛ'kɔndrI 'sku:]	Incorrect word stress on 'secondary'.
H7	come and queue up	['kʌm 'ɛnd kju 'ʌp]	Incorrect rhythm - no stress on 'queue'
Y12	work	[ˈwɔk]	/ɜ:/ > [ɔ]
H2	are occurring	[a:'kə:ri ŋ]	Incorrect elision of first syllable of 'occurring'.
H5	recent	['ri:zənt]	/s/ > [z]
Y6	as well read the books	Pronunciation satisfactory	Incorrect syntax

In these examples, then, six different causes of error were identified: incorrect word stress, incorrect rhythm, mispronunciation of vowel, incorrect elision, mispronunciation of consonant, and incorrect syntax.

In all cases of intelligibility failure the breakdown in communication has been ascribed to <u>one</u> major cause, even though there may have been other, but less important, contributory factors, e.g. nasality. In most cases one predominant cause of unintelligibility was apparent but in some instances two or more possible explanations presented themselves. For example, Speaker Y1 pronounced 'seen' as ['sĩ]. Three listeners failed to respond at all and one wrote 'three'. The cause of unintelligibility could have been due to omission of final /n/ or nasalisation of the vowel. It was decided that the omission of the final consonant was the major cause of unintelligibility, as 'seen' pronounced with a nasalised vowel is quite intelligible, whereas with the final vowel omitted it is not.

Another example occurred with Speaker Y5 who pronounced 'arrange' as ['arentʃ]. The problem here was to decide whether the major cause of intelligibility failure

was due to incorrect word stress or mispronunciation of final /dʒ/. Four listeners wrote 'are arranged', one failed to respond and one wrote 'are reached'. The fact that the majority of listeners who failed to understand were confused by the stress on the initial syllable and responded by writing 'are' led to the conclusion that incorrect word stress was the major cause of unintelligibility.

A more difficult case occurred with Speaker H7 who in the phrase 'it happens because' pronounced 'happens' as [ˈhjɛpəs]. Eight listeners responded as follows:

it was - because (5)
it was difficult because
it helped because
it was therefore because

The problem here was to decide whether the major cause of unintelligibility was due to the first vowel in 'happens' changing from /æ/ to [ɛ] + palatalisation, or whether it was because final /nz/ became [s]. Informal tests with native speakers showed that 'happens' pronounced as [ˈhjɛpənz] is perfectly comprehensible; when the final consonant cluster /nz/ is reduced to [s] however, the pronunciation [ˈhjɛpəs] proved unintelligible. Therefore it was concluded that the major cause of unintelligibility in this instance was the mispronunciation of the final consonant cluster. This is borne out by the fact that seven listeners wrote 'was', which indicates that their attention was primarily focussed on the incorrect final sibilant.

As the analysis proceeded a number of clear cut and not so clear cut categories of error emerged. In order to present the findings in a coherent form and to facilitate phonetic description it was necessary to assign the speakers' errors to well-defined categories.

10.2 Classification of intelligibility failure

The categories finally decided upon were as follows:

1. Incorrect rhythm (including rhythmic compression)
2. Incorrect word stress
3. Incorrect phrasing
4. Mispronunciation of vowels

5. Mispronunciation of diphthongs
6. Mispronunciation of consonants
7. Mispronunciation of consonant clusters
8. Incorrect elision - (i) elision of phonemes, (ii) elision of syllable
9. Incorrect assimilation
10. Metathesis
11. Incorrect, unusual and unfamiliar lexis
12. Incorrect and unusual syntax

A note on each of these categories now follows.

10.2.1 Incorrect rhythm (including rhythmic compression)

The term 'incorrect rhythm' is used here to describe any variation from normal English rhythm above the level of the word. This usually took two main forms: more stressed syllables than would be normal and fewer stressed syllables than would be normal in the speech of a native English speaker. These two types are exemplified respectively by Speaker Y6: 'I am not given too much work to do' [ˈai ˈam ˈnɔt ˈgivIn tu ˈmɔʃ ˈwɔk ˈtu ˈdu] and Speaker H3: 'to eat food' [tʊ ˈi:t fʊd].

'Rhythmic compression' is the term used when whole phrases or clauses were not understood by the listeners and it was not possible to identify any single cause of unintelligibility. For example Speaker H11 pronounced 'changes that are occurring' as [ˈtʃendʒIz ðæ taʔ eˈkɐ:rIn]. All 10 listeners failed to understand a single word. Because none of the listeners provided any written clues, the cause of unintelligibility was ascribed to the telescoping of syllables without any identifiable rhythmic pattern i.e. rhythmic compression. As the borderline between incorrect rhythm and rhythmic compression was in some cases blurred, the two have been bracketed together for the purposes of this analysis.

10.2.2 Incorrect word stress

This category covers those instances where the Nigerian speakers' accentual pattern differed from the normal English accentual pattern and caused a breakdown in communication with the listeners. There was the additional complication that incorrect word stress also often brought about incorrect sounds, especially vowels. Thus the deviation was

often a complex of accentual and phonemic errors, with the accentual deviation being prime. Examples of this are Speaker H1 pronouncing 'football' as [fut'bol] and the pronunciation of 'welcome' as ['wɛl'kɔm] by Speaker Y11. Errors in stress patterns occurring over two or more words - e.g. 'table tennis' pronounced as ['tebũ̃ tɛ'nis] by Speaker Y3 - were classified under incorrect rhythm.

10.2.3 Incorrect phrasing

This category is, of course, closely connected with incorrect rhythm. It usually occurred when the speaker was hesitating or thinking about his choice of words, resulting in an interruption of the rhythm of the sentence, together with incorrect intonation grouping. Examples are 'before I/ entered' [bi'fɔai/ 'enta] and 'most of/ what you/ do' ['mos ɔ/wɔt juʔ/'du] in the speech of Y1 and H12 respectively.

10.2.4 Mispronunciation of vowels

This was a straightforward category and is shown in the analysis in the next section thus:

/ʌ/ > [ɔ]
struck ['strɔk] (Y4)

/ɑ:/ > [a]
part ['pat] (H9)

10.2.5 Mispronunciation of diphthongs

Again a straightforward category, shown as follows:

/eI/ > [e]
places ['plesiz] (Y6)

10.2.6 Mispronunciation of consonants

This category of error has been sub-divided into three according to position in the word, i.e. initial, medial or final:

Initial /θ/ > [t]
think ['tiŋk] (Y6)

Medial /s/ > [z]
recent ['ri:zənt] (H5)

Final /d/ > [t]
depend [di'pent] (Y3)

10.2.7 Mispronunciation of consonant clusters

As with the above the categories have been sub-divided according to position, e.g.:

Initial /gr/> [gl]
great ['glet] (H9)

Medial /nʃ/> [ʃ]
mention ['mɛʃən] (H4)

Final /ts/ > [s]
notes ['nos] (Y3)

10.2.8 Incorrect elision

In this category two main types of elision are recorded: (i) elision of phonemes and (ii) elision of complete syllables. In the former type elisions may occur within the word or at word boundaries e.g.

folk ['fo] (Y11)
the work ['ðwək] (H9)

Elision of syllables is exemplified by:

qualification ['kwɔlI'keʃn] (Y11)
you become married [ju kəm 'mæ rIt] (H11)

10.2.9 Incorrect assimilation

This category was a straightforward one to classify. Two examples follow:

approach the (girl) [ə'prouð ðI] (H8)
if one [iv] (Y12)

10.2.10 Metathesis

This was a rare category. Examples are as follows:

predecessors [ʔri'sidesəs] (Y10)
threepence ['θərpəns] (H7)

10.2.11 Incorrect, unusual and unfamiliar lexis

There were a number of instances where lexical difficulties led to a failure in communication. These can be broken down into three sub-divisions:

(a) 'incorrect' lexis. Here the speaker used a lexical item that would not be acceptable to a native speaker, e.g.

to keep for my house = (to be goalkeeper) (H1)
I met the contrary (Y3)

(b) 'unusual' lexis. Here the lexical item is not actually incorrect, but is distinctly unusual, e.g.:

some strokes of the bell (Y7)
such high courses (H12)

(c) 'unfamiliar' lexis. These are mainly instances of common West African usage which were unfamiliar to listeners, e.g.:

district head (H10)
compound (H10)

There were also one or two instances where the term used was not necessarily West African, but was nevertheless unfamiliar e.g.

fagging system (H1)

10.2.12 Incorrect and unusual syntax

Finally, there were a number of cases where syntactic problems led to unintelligibility. Two types can be distinguished:

(a) 'incorrect' syntax. Here the speaker used a structure that would not be accepted as correct by a native speaker e.g.

the teacher does the less (Y3)
anything can be done tangible about it (H9)

(b) 'unusual' syntax. In these instances the structure was correct grammatically, but the combination of words would not normally have been used by a native speaker, e.g.

a goal to be registered by an opponent (Y1)
we are three in a room (Y6)

10.3 Breakdown of errors, speaker by speaker

In Appendix II full details are set out of the instances of intelligibility failure between speakers and listeners. These are listed, speaker by speaker, in order of occurrence and contain information on each speaker's text or word, pronunciation of key word(s), listeners' responses, likely cause of error and number of occurrences i.e. the number of listeners who failed to understand a particular utterance.

In this section the information found in Appendix II is summarised, speaker by speaker, according to the categories of error discussed in 10.2. The categories are set out in rank order for each speaker, the highest category of error being listed first, the lowest category last. For example, with Speaker Y1 mispronunciation of vowels was the most important single cause of intelligibility failure and 35 cases of listener failure were noted in this category. The next most important category of error was mispronunciation of consonants (23 cases of listener error) and so on down to the least important category - incorrect, unusual and unfamiliar lexis (4 cases noted).

Within each category of error a further breakdown is shown of the <u>type</u> of error which led to intelligibility failure. Thus with Speaker Y1, among the 35 cases of listener failure with vowels, it will be seen that mispronunciation of /ɔ:/, pronounced as [ɔ], led to 11 instances of unintelligibility with listeners. A further breakdown shows that the 11 instances were made up as follows:

form	['fɔm]	(9 listeners)
warned	['wɔn]	(2 listeners)

All the failures in intelligibility in connected speech were categorised in this way and from this it is possible to draw conclusions about the main types of error in Nigerian English which lead to intelligibility failure. This will be shown in 10.4 and 10.5. The summaries of the categories of error, speaker by speaker, now follow.

Y1

(a) Mispronunciation of vowels: 35 cases

/ɔ:/ > [ɔ] 11
form ['fɔm] (9)
warned ['wɔn] (2)

/ɜ:/ > [a] 9
were ['wa] (5)
heard ['had] (4)

/ɜ:/ > [ɔ] 6
work ['wɔk]

/ʌ/ > [ɔ] 6
fundamentally ['fɔnda'mẽntali]

/ɑ:/ > [a] 3
started ['sta'ted]

(b) Mispronunciation of consonants: 23 cases

Initial /θ/ > [t] 8
thumb ['tɔmp]
Initial /s/ > [s̻], heard as [θ] 7
senior ['s̻ĭnjɔ]
Initial /ð/ > [d̻] 3
those ['dos]
Medial /ʃ/ > [s] 3
rushed ['rɔst]
Final /l/ > [ũ] 2
hospital ['ɔspitũ]

(c) Incorrect elision: 14 cases

Initial /I/ 4
impressed [m'prɛ̃z]
Final /m/ 4
aim ['ɛ̃]
Final /n/ 4
seen ['sĩ]
Final /ŋ/ 2
interesting ['ĩtrɛsti]

(d) Incorrect phrasing: 10 cases

there was/ a case [dɛa'wɔs/e'kes] 6
before I/ entered [bi'fɔai/'enta] 4

(e) Incorrect and unusual syntax: 10 cases

I had strong aspiration for going 4
a goal to be registered by an opponent 4
I restrained from footballing 2

(f) Mispronunciation of consonant clusters: 9 cases

Initial /θr/> [tIr]
three ['tIri]

(g) Mispronunciation of diphthongs: 9 cases

/aiə/ > [ao]
pioneering [pao'nɛ̃rɪ̃]

(h) Incorrect words stress: 6 cases

secondary [sɛ'kɔndrI] 4
heeded [hi:'dɛd] 2

(i) Incorrect, unusual and unfamiliar lexis: 4 cases

tenniquoit

Y2

(a) Mispronunciation of diphthongs: 13 cases

/eI/ > [e] 8
shape ['ʃep] (4)
basic ['besIk] (4)

/aʊ/ > [ɛ̃] 5
sound ['sɛ̃nd]

(b) Incorrect word stress: 12 cases

associate [aʃo'ʃiet] 8
physical ['fizi'kal] 4

(c) Mispronunciation of vowels: 10 cases

/3:/ > [a] 10
certain ['satn] (8)
certain ['satin] (2)

(d) Mispronunciation of consonant clusters: 2 cases

Initial /st/ > [s]
standard ['sandad]

(e) Incorrect elision: 6 cases

Final /tʃ/ 3
which ['wi]
Final /nz/ 3
means ['mɪ̃]

(f) Incorrect rhythm (including rhythmic compression): 5 cases

Know the time ['no dI taim] 3
let's say ['lɛs se] 2

(g) Mispronunciation of consonants: 4 cases

Initial /ð/ > [d]
the ['dI]

(h) Metathesis: 3 cases

Christian [ˈkərʃn]

(i) Incorrect and unusual syntax: 2 cases

will no more exist

Y3

(a) Mispronunciation of vowels: 53 cases

/ʌ/ > [ɔ] 19
clubs [ˈklɔbz] (10)
compulsory [kɔmˈpɔlsri] (9)

/ɜ:/ > [a] 10
research [riˈsatʃ]

/ʌ/ > [ɑ] 7
much [ˈmɑʃ]

/ɔ:/ > [ɔ] 7
enforces [enˈfɔsis]

/ɔ:/ > [o] 6
laws [ˈlos]

/ɜ:/ > [o] 4
working [ˈwokɪŋ]

(b) Incorrect rhythm (including rhythmic compression): 45 cases

we rely on [wiriˈlaiɔ̃] 10
the life here is [diˈlaifhɛəs] 4
we're being trained [wiaˈbin trend] 5
we're being made [wiaˈbin med] 7
table tennis [tebũ tɛˈnis] 3
spend his (leisure) [ˈspɛndIz] 2
it will be necessary [itũbiˈnɛ̃zri] 9
enough space [ˈinɔf spes] 5

(c) Mispronunciation of consonants: 40 cases

Initial /θ/ > [t] 14
thought [ˈtɔt] (8)
things [ˈtɪ̆ns] (6)

Medial /z/ > [s] 9
reside [rIˈsaid]

Final /ŋ/ > [n] 7
feeding [ˈfi:din]

(c) (Cont.)

Final /l/ > [ũ] 6
little ['litũ]

Final /d/ > [t] 4
depend [di'pent]

(d) Incorrect elision: 39 cases

we were ['wia] 5
social ['sʃal] 7
supervision ['spaviʃn] 7

Initial /h/ 4
has ['az]

Final /n/ 2
fine [faĩ]
Omission of syllable 14
social aspect [so'ʃaspɛkt] (10)
possible ['posũ] (4)

(e) Incorrect word stress: 27 cases

parents [pe'rẽns] 5
recreation [re'krieʃn] 5
freedom ['fri'dɔm] 10
campus ['kam'pɔs] 3
movement [muv'ment] 4

(f) Mispronunciation of consonant clusters: 21 cases

Medial /dr/ > [d] 5
secondary ['sɛkɔndI]
Final /ts/ > [s] 6
notes ['nos]
Final /lz/ > [z] 6
rules ['ru:z]
Final /ft/ > [vt] 4
left ['levt]

(g) Incorrect and unusual syntax: 8 cases

the teacher does the less

(h) Incorrect phrasing: 9 cases

where/ everything was/ virtually made...../
[wɛa/ɛvri 'θin 'wɔz/ 'vatjuli'med]

(i) Incorrect, unusual and unfamiliar lexis: 7 cases

I met the contrary 4
academic aspect 3

(j) Mispronunciation of diphthongs: 4 cases

/ɛə/ > [ɛa]
where ['wɛa]

Y4

(a) Incorrect rhythm (including rhythmic compression): 18 cases

by way of [ˈbᵊweiᵊv] 8
the more so as [ðIˈmɔːsoəz] 8
get away [ˈget əwə] 2

(b) Incorrect elision: 12 cases

Final /d/ 6
ride [ˈrai]
Initial /I/ 3
encounter [ŋˈkauntᵊ]
Federation [fɛdˈreʃn] 3

(c) Mispronunciation of diphthongs: 5 cases

/ɛə/ > [iə] 3
parents [ˈpiərəns]
/eI/ > [e] 2
made [ˈmed]

(d) Incorrect word stress: 2 cases

interval [intəˈval]

(e) Mispronunciation of vowels: 2 cases

/ʌ/ > [ɔ]
struck [ˈstrɔk]

(f) Incorrect, unusual and unfamiliar lexis: 2 cases

transferred a lot (= often posted to a new job)

Y5

(a) Incorrect word stress: 58 cases

normally	[nɔˈmali]	18
usually	[juˈʒali]	8
usually	[juˈʒiali]	6
introduced	[ˈintroˈdjust]	4
arrange	[ˈarentʃ]	6
economic	[IˈkɔnomIk]	6
disadvantage	[dĭzadˈvantidʒ]	3 (Context required stress on 'dis')
interesting	[inˈtrɛstin]	7

(b) Incorrect rhythm (including rhythmic compression): 38 cases

for choosing [ˈfɔˈtʃusin] 5
in order to keep [ĭn ˈɔda ˈtu ˈkip] 7
the choice of their son [ˈði ˈtʃɔiz ˈɔv ˈðɛ ˈsɔn] 5
having a (wife) [ˈhavina] 5

(b) (cont.)
could break a family [kud 'brek 'ei fam'ili] 3
both couples [boθ 'kɔ pũz] 6
get used (to) ['gɛt just] 7

(c) Incorrect elision: 16 cases

would not ['wũnan] 9
Final /f/ 5
wife ['wãi]
Final /n/ 2
done ['dã]

(d) Mispronunciation of vowels: 15 cases

/ʌ/ > [ɔ] 5
us ['ɔz]
/e/ > [ĩ] 4
sense ['sĩns]
/ɜ:/ > [a] 4
were ['wa] (2)
earns ['anz] (2)
/ɜ:/ > [ɔ] 2
works ['wɔks]

(e) Mispronunciation of consonants: 8 cases

Final /dʒ/ > [tʃ] 5
age ['etʃ]
Final /dʒ/ > [ʒ] 3
marriage ['mariʒ]

(f) Mispronunciation of consonant clusters: 6 cases

Final /nts/ > [z] 4
parents ['perɛ̃z]
Final /nz/ > [z] 2
happens ['hapũz]

(g) Incorrect, unusual and unfamiliar lexis: 3 cases

he tells his choice

(a) Incorrect word stress: 52 cases

overbearing [o'va'berin] 10
environment [ɛn'vairən'ment] 4
reference ['rɛfɛ'rɛnz] 5
socially [so'ʃali] 7
hostel [ho'stel] 4
(at) present ['prɛ'zent] 5
convenient ['kɔn'viniənt] 5
secondary ['sɛ'kɔndrI] 3
expected [ɛ'spek'ted] 9

(b) Incorrect rhythm (including rhythmic compression): 33 cases

When I was in the H.S.C. [ˈwɛnˈai wɔz n ðI [HSC]] 4
having a very nice time [havin ə vəri ˈnais taim] 3
having much time to myself. [ˈhaviŋə ˈmɔʃ taim tu
mai ˈsɛlf] 3
I came first [ai ˈkem fəst] 4
I am not given too much work to do [ˈai ˈam ˈnɔt
ˈgivIn tuˈmɔʃ ˈwɔkˈtuˈdu] 10
I don't see the reason [ai ˈdoun sI dI ˈriˈzin] 2
trying to do about it [ˈtraiin tə du ˈabautˈit] 7

(c) Incorrect elision: 26 cases

is not [iz ˈint] 7
is not [ˈizin] 5
in the [Iðˈ] 4
Omission of syllable 4
people [ˈpʰũ]

(d) Mispronunciation of vowels: 24 cases

/ɜ:/ > [ɔ] 14
work [ˈwɔk]
/æ / > [a] 5
banked [ˈbaŋkt]
/I/ > [i] 3
forty [ˈfɔti]
/ʊ/ > [u] 2
books [ˈbuks]

(e) Mispronunciation of consonants clusters: 21 cases

Medial /ktʃ/ > [t ʃ] 5
lectures [ˈlɛtʃəs]
Medial /ktʃ/ > [ʃ] 5
lecturer [ˈlɛʃra]
Medial /str/ > [sr] 3
history [ˈhisri]
Final /mz/ > [z] 8
rooms [ˈrʰũ:z]

(f) Incorrect and unusual syntax: 19 cases

an hour writing 8
as well read the books (= read the books as well) 6
we are three in a room 5

(g) Incorrect, unusual and unfamiliar lexis: 13 cases

it doesn't sound well to me 4
staying around with people around 9

(h) Mispronunciation of consonants: 12 cases

Initial /θ/ > [t] 6
think [ˈtiŋk]
Final /ŋ/ > [n] 4
taking [ˈtekin]
Final /l/ > [ũ] 2
people [ˈpipʰũ]

(i) Metathesis: 12 cases

especially [eʒ'pəli] 7
to realise [tuər'laiz] 5

(j) Mispronunciation of diphthongs: 9 cases

/eI/ > [e] 9
break ['brek] (3)
places ['plesiz] (6)

(k) Incorrect phrasing: 6 cases

not/what/I admire/ ['nɔt/'wɔt/ai ad'maiə]

Y7

(a) Incorrect rhythm (including rhythmic compression): 52 cases

first entered [fɔs'ɛnta] 4
not knowing what to do [nə̃ 'nõĩ wɔtju'du] 8
not knowing what to do ['nɔ̃nõĩ 'wɔtu'du] 4
saw others [sɔɔ'ðas] 4
not disobeying ['nɔdiso'bẽ] 7
after having seated myself ['aftəavɪ̃ si'te mai'sɛlf] 7
he announced a hymn [ia'naũst ei'him] 7
he welcomed new students [hi 'wɛl'kɔmd nju stu'dɛ̃nz] 5
dining hall [dainɪ̃ 'hɔ] 6

(b) Mispronunciation of vowels: 34 cases

/ʌ/ > [ɔ] 11
government ['gɔvmən] (9)
run (back) ['rɔm] (2)
/ɜ:/> [ɔ] 10
first ['fɔs]
/ɜ:/> [e] 7
heard ['hed]
/ɜ:/ > [ɛ] 3
heard ['hɛd]
/æ/ > [ɛ] 3
January ['dʒɛnuari]

(c) Incorrect word stress: 15 cases

prefect [prI'fɛkt] 5
prefect [prI'fɛ] 10

(d) Incorrect, unusual and unfamiliar lexis: 11 cases

I heard a tapping (= felt) 4
some strokes of the bell 7

(e) Incorrect elision: 11 cases

principal ['prins'pal] 4
Final /t/ 2
got ['go]

(e) (cont.)
Omission of syllable $_{h}$ 5
body [ˈbɔdˌ]

(f) Mispronunciation of diphthongs: 7 cases

/ei/ > [e] 7
raise [ˈrez] (3)
main [ˈmen] (2)
canes [ˈkenz] (2)

(g) Mispronunciation of consonants: 7 cases

Initial /b/ > [β̊] 5
bed [ˈβed]
Final /dʒ/ > [tʃ] 2
stage [ˈstetʃ]

(h) Mispronunciation of consonant clusters: 3 cases

Initial /pr/ > [p] 3
primary [ˈpaiməri]

Y8

(a) Incorrect rhythm (including rhythmic compression): 31 cases

can be made [ˈkã̃ bi met] 6
the present educational.. [di ˈprɛsɛnt ɛdʒukɛˈʃnal] 4
introduce her to [intro ˈdusi tu] 8
how high [au ˈai:] 6
I started school [aiˈstatɛdskũ̃] 7

(b) Incorrect word stress: 30 cases

into [inˈtu] 8
characteristic [ˈkaˈraˈtɛˈristik] 5
maketh [meˈkɛθ] 3
actually [aktʃuˈali] 3
encountered [ɳˈkaunˈtə:d] 5
modern [ˈmɔˈdã̃n] 4
admitted [admiˈted] 2

(c) Mispronunciation of vowels: 18 cases

/ʌ/ > [ɔ] 6
love [ˈlɔf] (3)
up [ˈɔp] (3)
/ɑ:/ > [a] 6
hardship [ˈhaˈʃip]
/ɔ:/ > [ɔ] 4
taught [ˈtɔt] (2)
course [ˈkɔs] (2)
/æ/ > [a] 2
manner [ˈmana]

(d) Incorrect elision: 18 cases

it will [ˈitũ] 6
Final /dʒ/ 6
marriage [ˈmari]
Final /n/ 4
modern [mɔˈda]
Final /m/ 2
time [ˈtãĩ]

(e) Incorrect, unusual and unfamiliar lexis: 11 cases

I passed out in 1954 (= left school) 2
I was given a double promotion 9

(f) Mispronunciation of consonants: 5 cases

Final /d/ > [t]
roamed (about) [ˈromt]

Y9

(a) Mispronunciation of vowels: 35 cases

/ɔ:/ > [ɔ] 16
call [ˈkɔl] (10)
talked [ˈtɔgd] (6)
/ʒ:/ > [a] 9
reverse [riˈvaz]
/æ/ > [a] 6
sat for (exam) [ˈsafɔ]
/ʌ/ > [ɔ] 4
enough [iˈnɔv]

(b) Incorrect phrasing: 22 cases

no/ idea what/soever ['nõ/aidɛa wɔt/'soɛva] 6
what university life/ would be ['wɔt jũn'vasti laiv/ wud'bi] 7
if he doesn't/ behave [ivi'dʌzn/bi'hev] 3
I have/ been made ['aiav/ bĩ'med] 6

(c) Mispronunciation of consonants: 19 cases

Initial /θ/> [t̪], heard as [s] 4
things [t̪iŋz]
Medial /s/ > [θ] 7
necessary [ˈnɛθəsri]
Final /f/ > [v] 8
life ['laiv]

(d) Mispronunciation of consonant clusters: 19 cases

Initial /st/ > [s] 3
students [su'denz]
Medial /ndʒ/ > [dʒ] 5
ranging ['redʒiŋ]
Final /md/ > [m] 7
acclaimed [a'klem]
Final /nt/ > [t] 4
meant ['met]

(e) Incorrect word stress: 16 cases

fathers [fa'ðaz] 5
guidance [gai'danz] 2
enunciated [I'nanʃie'ted] 9

(f) Incorrect elision: 11 cases

conscientiously [kɔn'tʃɛn'tʃəs'li] 6
Initial /h/ 5
hate ['et]

(g) Incorrect, unusual and unfamiliar lexis: 7 cases

in very referred positions

(h) Incorrect rhythm (including rhythmic compression): 6 cases

in point of fact [mpɔ̃inə'fakt]

(i) Mispronunciation of diphthongs: 6 cases

/eI/ > [e]
made ['med] (4)
tales ['telz] (2)

(j) Metathesis: 4 cases

often ['ɔfənt]

Y10

(a) Incorrect word stress: 47 cases

realising [rɛa'laisiŋ] 10
importance [impɔ'tans] 10
recreation [rɛkrie'ʃã] 6
brother [brɔ'da] 5
reminding [rimaĩ'diŋ] 6
usual [ju'ʃal] 10

(b) Mispronunciation of vowels: 37 cases

/ʌ/ > [ɔ] 22
number ['nɔmba] (9)
nothing ['nɔ'tin] (9)
young ['jɔŋ] (4)
/i:/ > [i] 6
meal ['mil]
/a:/ > [a] 6
farmer ['fama]
/ɜ:/ > [a] 3
learn ['lan]

(c) Incorrect elision: 29 cases

Initial /h/ 4
have ['av]
Final /l/ 9
real ['ria]
Final /d/ 5
had ['a]
Final /n/ 5
been ['bi]
/j/-glide (+ vowel change) 6
pupil ['pipũ]

(d) Incorrect rhythm (including rhythmic compression): 26 cases

wherever he goes ['wɛrva i'gos] 2
not even up to the age [nɔ'tivin 'ɔptudi'edʒ] 10
I come to the age of [ai 'kɔm'tudi 'edʒəv] 2
not all that pleasant ['nɔtolda 'ple'sant] 5
forced on me ['fɔsãmi] 7

(e) Mispronunciation of consonant clusters: 19 cases

Initial /pr/ > [p] 5
primary ['paiməri]
Final /ts/ > [z] 7
hates ['hez]
Final /dz/ > [z] 5
attitudes ['ati'tu:z]
Final /nd/ > [ũ] 2
happened ['hapũ]

(f) Mispronunciation of diphthongs: 15 cases

/əʊ/ > [ɔ:] 7
only ['ɔ:]
/eI/ > [e] 5
male ['mel]
/ɛə/ > [e] 3
area ['eria]

(g) Mispronunciation of consonants: 9 cases

Initial /θ/ > [t] 6
think ['tiŋk]
Final /z/ > [s] 3
things ['t^{h}ɪŸs]

(h) Metathesis: 8 cases

predecessors [pri'sidesəs]

(i) Incorrect, unusual and unfamiliar lexis: 4 cases

senior brothers

Y11

(a) Incorrect elision: 30 cases

he would [i'wu] 9
certificate ['satf'kat] 4
Initial /h/ 4
has ['as]
Final /k/ 7
folk ['fo]
Final /v/ 2
of ['ɔ]
Omission of syllable 4
qualification ['kwɔlI'keʃn]

(b) Incorrect word stress: 22 cases

actually ['aktʃu'ali] 16
welcome ['wɛl'kɔm] 4
Nigerian ['naidʒi'rɑ̃n] 2

(c) Mispronunciation of vowels: 20 cases

/ɜ:/ > [a] 15
her ['a] (8)
her ['ha] (7)
/ɜ:/ > [ɔ] 5
turn ['tɔn]

(d) Mispronunciation of consonants: 16 cases

Initial /θ/ > [t] 4
through ['tru]
Initial /ʃ/ > [s̻] 4
she ['s̻i]
Medial /f/ > [v] 5
prefers [pri'vas]
Final /l/ > [ũ] 3
suitable [sjuti'bũ]

(e) Mispronunciation of consonant clusters: 6 cases

Final /st/ > [s]
almost ['ɔl'mos]

(f) Incorrect rhythm (including rhythmic compression): 4 cases

the only thing you need to [di 'onli 'θɣ ju 'nɣ tu]

(g) Incorrect and unusual syntax: 3 cases

She only need to present

Y12

(a) Mispronunciation of consonant clusters: 30 cases

Initial /θr/ > [θIr] 5
three ['θIri]
Medial /gz/ > [z] 5
exam [ɛ'zam]
Final /dz/ > [s] 8
needs ['nis]
Final /nt/ > [t] 6
meant ['mẽt]
Final /ks/ > [s] 3
books ['bus]
Final /st/ > [s] 3
rest ['rɛs]

(b) Mispronunciation of vowels: 30 cases

/ɔ:/ > [ɔ] 16
hall ['hɔl] (9)
hall ['hɔ] (4)
taught ['tɔt] (3)
/i:/ > [i] 8
see ['si]
/ɜ:/ > [ɔ] 3
walk ['wɔk]
/ʌ/ > [ɔ] 3
up ['ɔ]

(c) Incorrect rhythm (including rhythmic compression): 26 cases

they will only tell you [ðe 'wI 'õnli 'tɛ 'ju] 5
as if one [az'ivwɔ̃] 8
if one says ['ivwɔ̃ses] 5
would one have [wu'wãnhv] 5
one may get to ['wãme'gɛtu] 3

(d) Incorrect elision : 25 cases

does not ['dou] 10
it will [it'wi] 10
Final /ŋ/ 5
dining ['daini]

(e) Incorrect word stress: 19 cases

reading [ri'din] 7
enjoyment [ɛ̃ndʒɔi'mɛ̃] 7
introducing ['introdju'sin] 3
feeding ['fi'din] 2

(f) Mispronunciation of consonants: 13 cases

Initial /θ/ > [s] 9
things ['sɪ̃ns]
Final /z/ > [s] 2
hours ['auəs]
Final /tʃ/ > [ʃ] 2
catch ['kaʃ]

(g) Mispronunciation of diphthongs: 11 cases

/ɛə/ > [a] 7
scarcely ['skasli]
/eI/ > [e] 4
play ['ple] (2)
day ['de] (2)

(h) Incorrect, unusual and unfamiliar lexis: 9 cases

when the exam is around

(i) Incorrect phrasing: 6 cases

university/ is a place [juni'vasIti / 'is e'ples]

(j) Incorrect assimilation: 2 cases

if one ['iv]

H1

(a) Incorrect word stress: 22 cases

acquainted ['akweintId] 2
forward ['fo'wad] 2
secondary [sɛ'kandrI] 8
football [fut'bol] 3
rendering ['rɛndə'riŋ] 4
preferred ['prI'fə:] 3

(b) Mispronunciation of vowels: 22 cases

/ɒ/ > [ə] 10
historical [hI'stərkl]
/ɜ:/ > [a] 5
service ['savIs]
/ɒ/ > [o] 4
modern ['modə n]
/ɑ:/ > [a] 3
part ['pat]

(c) Incorrect rhythm (including rhythmic compression): 14 cases

in one place [In 'wã ples] 2
very day ['vɛrI de] 3
in order to meet [n odə tu'mi:t] 4
hockey players [ɔkI 'pleəs] 3
Red Cross Society ['rɛd krɔs so'saitI] 2

(d) Mispronunciation of consonants: 13 cases

Initial /f/ > [p] 3
first ['pəs]
Medial /b/ > [β̂], heard as [v] 10
labour ['leβə]

(e) Incorrect, unusual and unfamiliar lexis: 11 cases

fagging system 4
to keep for my House 7

(f) Incorrect elision: 8 cases

did not [ˈdInt] 3
participating [paˈtIspetiŋ] 5

(g) Mispronunciation of diphthongs: 5 cases

/eI/ > [e] 3
gain [ˈgen]
/aIə/ > [aijə] 2
acquire [əˈkwaijə]

(h) Incorrect and unusual syntax: 5 cases

the benefit of it 3
doing such job 2

(i) Mispronunciation of consonant clusters: 2 cases

Final /ts/ > [s]
scouts [ˈskaus]

H2

(a) Mispronunciation of vowels: 27 cases

/æ/ > [ɛ́] , (+ palatisation) 6
had [ˈhjɛd]
/e/ > [ɛə] 6
unrest [anˈrɛəst]
/ɔ:/ > [ou] 6
talking [ˈtoukiŋ]
/ɑ:/ > [a] 4
regard [rIˈgad]
/i:/ > [i] 3
reached [ˈritʃt]
/ɒ/ > [ɛ́] 2
provocative [proˈvɛkItIv]

(b) Incorrect elision: 21 cases

the ways [ˈðwes] 6
Final /f/ 2
wife [ˈwai]
Omission of syllable 13
are occurring [ɑ:ˈkə:riŋ] (8)
tightening [ˈtaitiŋ] (5)

(c) Incorrect rhythm, (including rhythmic compression): 16 cases

for example, if ..... [fɔ Iˈzɑ:mplˈIf] 2
such a way [ˈsatʃ ə we] 4

(c) (cont.)
as far as I am concerned [jɛz 'fa əz aim 'kɔn'sə:nd] 4
I can understand [ai kæn 'andəstən] 6

(d) Mispronunciation of diphthongs: 12 cases

/eI/ > [e] 12
changes ['tʃendʒIs] (9)
gave ['gev] (3)

(e) Incorrect, unusual and unfamiliar lexis: 7 cases

tight friends (= close friends)

(f) Incorrect word stress: 6 cases

usually [ju'ʒəlI]

(g) Mispronunciation of consonants: 4 cases

Final /t/ > [t^h] 4
that wife [ðat^h'waif]

(h) Incorrect and unusual syntax: 3 cases

this tradition is occurring very greatly

(i) Incorrect phrasing: 3 cases

might have been/ wooed [maitʰəv 'bin/ 'wud]

H3

(a) Mispronunciation of vowels: 11 cases

/ɜ:/ > [a] 4
heard ['had]
/ə/ > [I] 4
given ['givIn]
/I/ > [ə] 3
since ['səns]

(b) Incorrect rhythm: 10 cases

even no time was allowed [ivən nəu 'taim wəz ə'laud] 5
to eat food [tʊ 'i:t fʊd] 3
best way ['bɛst we] 2

(c) Incorrect and unusual syntax: 4 cases

on so so and so so books

(d) Mispronunciation of diphthongs: 4 cases

/eI/ > [e] 4
aim ['em]

(e) Incorrect, unusual and unfamiliar lexis: 2 cases

cinemas (= films)

H4

(a) Incorrect elision: 19 cases

we didn't [wI'dn] 4
was not ['wɔzən] 3
Final /m/ 3
time ['tai]
Omission of syllable 9
Islamic education [Is'læʔ ɛdju'keʃn] (5)
natural ['nɛtʃər] (4)

(b) Mispronunciation of vowels: 13 cases

/ɒ/ > [o] 6
modern ['modən]
/I/ > [i:] 3
him ['hi:m]
/ɔ:/ > [ɔ] 4
born ['bɔn]

(c) Incorrect phrasing: 10 cases

I still/ can remember his name 3 [ai stIl/
kə rI'mɛmbə hIs 'nem]
to solve my/ my own/ arithmetic 7 [tʊ 'sɔlv mai/
mai 'ɔn/ ə'rIθmɛtIk]

(d) Mispronunciation of consonants: 9 cases

Syllabic /l/ > [I] 9
middle ['mIdI]

(e) Mispronunciation of diphthongs: 8 cases

/ɔI/ > [ə i]
boys ['b əis]

(f) Mispronunciation of consonant clusters: 8 cases

Medial /nʃ/ > [ʃ]
mention ['mɛʃə n]

H5

(a) Mispronunciation of vowels: 18 cases

/ʌ/ > [ə] 16
study ['stədI] (9)
money ['məni] (7)
/ɒ/ > [a] 2
wants ['wanz]

(b) Incorrect and unusual syntax: 9 cases

for to select their own wives 2
I will fall in for her (= fall in love with her) 7

(c) Incorrect phrasing: 7 cases

come and/ solve [kʌ'mənd/'sov] 3
how/ I hope [hau/ ai 'houp] 4

(d) Incorrect rhythm: 7 cases

how she appears [hau 'ʃi əpiəz] 4
little or nothing [litəl 'ə: 'nʌθIn] 3

(e) Incorrect word stress: 5 cases

traditional ['tra'diʃnu] 3
apply ['a'plai] 2

(f) Mispronunciation of consonants: 3 cases

Medial /s/ > [z]
recent ['ri:zənt]

(g) Mispronunciation of consonant clusters: 2 cases

Final /nd/ > [n]
mind ['main]

H6

(a) Incorrect word stress: 6 cases

hostel [hɔ'stɛl] 3
university ['junIvə:sI] 3

(b) Mispronunciation of vowels: 5 cases

/ɒ/ > [o] 2
because [bI'koz]
/ɒ/ > [ə] 3
want ['wənt]

(c) Mispronunciation of consonants: 4 cases

Initial /h/ > [hw]
who ['hwʊ]

H7

(a) Incorrect rhythm (including rhythmic compression): 57 cases

and what would be the outcome [n əwɔt wd bI ðI 'autkʌm] 10
are not sent ['ɑ:r nət 'sɛnt] 4
come and queue up ['kʌm 'ɛnd kju 'ʌp] 6
when we were passing ['hwan wiʔ a 'pasIn] 10
come back ['kʌm bæʔ] 8
what is usually done [hwət Is ju'ʒʊalI dən] 8
teaching us ['ti:tʃIn 'ʔʌs] 3
the first impression [ðI fas im'prɛʃIn] 7

(b) Mispronunciation of vowels: 33 cases

/ɜ:/ > [a] 12
were ['wa] (10)
early ['alI] (2)
/æ/ > [ɛ] 10
having ['hɛvI]
/ɑ:/ > [a] 7
master ['masə]
/ɒ/ > [ə] 4
lot ['lət]

(c) Mispronunciation of consonant clusters: 18 cases

Medial /stʃ/ > [sj] 8
Christians ['krIsjiənz]
Final /nz/ > [s] 8
happens ['hjɛpəs]
Final /nd/ > [n] 2
ground ['graun]

(d) Mispronunciation of consonants: 14 cases

Medial /f/ > [p] 7
forefinger ['fɔ:'pIŋgə]
Final /z/ > [s] 7
boys ['bɔis]

(e) Incorrect word stress: 14 cases

usually [ju'ʒʊəli] 4
primary [prai'marI] 3
hostel ['hɔ'stel] 2
properly ['prɔ'pəli] 5

(f) Incorrect assimilation: 12 cases

realise the (value) [rɛə'laið ðI] 5
not used to [nɔ'tʃʊst tə] 7

(g) Incorrect elision: 10 cases

Omission of syllable 10
government ['gʌvənt]

(h) Incorrect, unusual and unfamiliar lexis: 10 cases

You are diverting our religion

(i) Metathesis: 10 cases

threepence ['θərpəns]

(j) Incorrect and unusual syntax: 9 cases

They shout on us 9

(k) Incorrect phrasing: 7 cases

close to our/ place ['kloʂ tʊ 'a/ 'ples] 3
three hours/ of/ writing [θri 'az/ ɔv/ 'raitIn] 4

(1) Mispronunciation of diphthongs: 5 cases

/ɛə/ > [a] 5
parent ['parənt]

H8

(a) Mispronunciation of vowels: 26 cases

/ɜ:/ > [a] 9
her ['ha] (6)
occurring [ə'kariŋ] (3)
/ɑ:/ > [ə] 6
start ['stət]
/ɔ:/ > [ɔ] 3
inform [In'fɔm]
/æ / > [ɛ] 4
graduate ['grɛdjʊət] (2)
character ['kɛrɛktə] (2)

(b) Incorrect rhythm, (including rhythmic compression): 25 cases

choosing a wife ['tʃyzIʔə waif] 3
for beauty only [fo'bju:tIɔnlI] 5
be loyal to me ['bI ləjəl tʊ'mi:] 9
School Certificate [skul 'sə:tIfkɛt] 4
'type of wife I want ['taip v waiv ai 'wənt] 4

(c) Incorrect assimilation: 18 cases

approach the (girl) [ə'prouð ðI] 8
choose the (wife) ['tʃu:ð ð I] 10

(d) Incorrect elision: 15 cases

she'll not (be able) ['ʃi nət] 6
Final /k/ 9
seek ['si:ʔ]

(e) Mispronunciation of diphthongs: 8 cases

/eI/> [e] 6
say ['se] (4)
pay ['pe] (2)
/əʊ/> [ɔ] 2
own ['ɔn]

(f) Incorrect and unusual syntax: 4 cases

my wife have

(g) Mispronunciation of consonants: 2 cases

Medial /p/ > [f]
developing [dI'vɛlofIn]

H9

(a) Incorrect rhythm (including rhythmic compression): 22 cases

if at all one is determined [If a'tolwɛ̃ Is dI'tə:mIn] 9

if at all [If æ 'təl] 6
one is (prepared) ['wɛ̃Is] 7

(b) Mispronunciation of vowels: 22 cases

/ɜ:/ > [ə] 15
world ['wəld]
/ɔ:/ > [ə] 5
thought ['θəːt]
/ɑ:/ > [a] 2
part ['pat]

(c) Incorrect elision: 22 cases

immediately ['mi:djɛtlI] 6
the work [ðwək] 9
co-operation [kɔpə're∫n] 2
growing ['groun] 5

(d) Incorrect, unusual and unfamiliar lexis: 13 cases

a bit normal 3
etc. (pronounced as ['i:ti:si:]) 10

(e) Incorrect word stress: 10 cases

category [kə'tagərI] 10

(f) Mispronunciation of consonant clusters: 10 cases

Initial /gr/ > [gl] 2
great ['glet]
Final /ts/ > [s] 8
sports ['spos]

(g) Incorrect phrasing: 6 cases

more than/ those ['moðən/ ðous] 6

(h) Mispronunciation of diphthongs: 5 cases

/ɔI/ > [əi] 3
join ['dʒæin]
/əʊ/> [ɔ] 2
own ['ɔn]

(i) Incorrect and unusual syntax: 5 cases

anything can be done tangible about it

H10

(a) Mispronunciation of vowels: 10 cases

/ɑ:/ > [a] 7
farm ['fam]
/i:/ > [I] (+ palatalisation) 3
people ['pjIpəl]

(b) Mispronunciation of consonant clusters: 9 cases

Medial /tr/ > [tIr] 4
expatriates [ɛks'patIri:ts]
Final /ts/ > [s] 5
sports ['spos]

(c) Mispronunciation of diphthongs: 7 cases

/ɑʊ/ > [a]
grounds ['granz]

(d) Incorrect and unusual syntax: 7 cases

boys were being playing about

(e) Incorrect, unusual and unfamiliar lexis: 5 cases

compound (= grounds, garden) 3
district head 2

(f) Incorrect word stress: 4 cases

compelled ['kɔm'pɛld]

(g) Mispronunciation of consonants: 4 cases

Initial /p/ > [f] 2
prefer ['frI'fə:r]
Final /ŋ/ > [n] 2
building ['bIldIn]

H11

(a) Incorrect rhythm (including rhythmic compression): 33 cases

go and get in contact [goun gɛt 'kɔnt ɐ k] 2
changes that are occurring ['tʃendʒIzð ɐ taʔ ə'kə:rin] 10
somebody like that [səm'bɔdI laik ðət] 5
should not be made [ʃʊd nɔt 'bi: med] 6
fortunate to have been given [fɔ'tjʊnət tuv bI givn] 10

(b) Incorrect word stress: 28 cases

beauty [ˈbju:ˈti] 3
given [ˈgiˈvən] 10
disadvantage [dIzədˈvəntI3] 9 (stress should be on 'dis' in the context).
allow [ˈalau] 6

(c) Mispronunciation of vowels: 28 cases

/ʌ/ > [ə] 9
love ['lə?] (6)
sons ['sənz] (3)
/æ/ > [ɛ] 5
manners ['mɛnəz]
/3:/ > [ə] 4
working ['wəkiŋ]
/ɑ:/ > [ə] 3
classmate ['kləsmeit]
/ɑ:/ > [a] 2
are [a]
/ʊ/ > [u] 3
would (like) ['wud]
/æ/ > [ə] 2
family ['fəmli]

(d) Mispronunciation of consonants: 22 cases

Initial /θ/ > [s] 14
things ['siŋz]
Medial /p/ > [f] 4
proper ['prɔfə]
Medial /dʒ/ > [ʒ] 4
religion [rə'lI3In]

(e) Incorrect, unusual and unfamiliar lexis: 22 cases

other relative children 6
their due freedom 10
Muslim (pronounced in unfamiliar way ['mʊslIm]) 6

(f) Incorrect elision: 18 cases

traditional ['traˈdiʃal] 4
did not ['dIn] 4
arrangements [əˈrenmənts] 3
Omission of syllable 7
you become married [jʊ kəm 'mæ rIt]

(g) Incorrect and unusual syntax: 12 cases

at all they wouldn't like to become 4
much non-related people 8

(h) Incorrect phrasing: 10 cases

they p.....change a/ an idea (phrasing + hesitation) [ðe pəˈtʃendʒ ə/ an 'aidiə] 10

(i) Incorrect assimilation: 5 cases

was brought [wəð 'brot] 5 (N.B. This phenomenon is not strictly a case of assimilation but is

(i) N.B. (continued)
nevertheless included in this category for convenience.)

H12

(a) Incorrect rhythm (including rhythmic compression): 13 cases

to read even in their rooms [tʊ rid 'ivən n ðɛə 'ru:mz] 9
if I were one of them [If 'ai wa 'wʌn v ðɛm] 4

(b) Mispronunciation of consonant clusters: 11 cases

Initial /st/ > [s] 9
standard ['s æ ndəd]
Medial /nst/ > [st] 2
instance ['Istən]

(c) Mispronunciation of consonants: 11 cases

Medial /v/ > [ʋ] 6
available [a'ʋeləbu]
Medial /f/ > [p^h] 5
comfort ['kʌmp^hə]

(d) Mispronunciation of vowels: 8 cases

/æ / > [a] 6
fans ['fanz]
/I/ > [i] 2
thing ['θiŋ]

(e) Incorrect elision: 6 cases

Final /kt/
respect [rə'spɛ]

(f) Incorrect word stress: 6 cases

sociable ['soʃe'bu] 4
particular ['patikju'la] 2

(g) Incorrect phrasing: 5 cases

for university/ students 2
[fɔ jʊnI'vasi/ 'studənz]
most of/ what you/ do 3
['mos ɔ/ wɔt juʔ/ 'du:]

(h) Mispronunciation of diphthongs: 4 cases

/eI/ > [e] 2
aim ['em]
/Iə/ > [ɛ'ə] 2
mere ['mɛə]

(i) Incorrect, unfamiliar and unusual lexis: 3 cases

such high courses

10.4 Summary of causes of error - 12 categories

The individual speaker's errors listed in section 10.3 are now summarised in rank order according to category. Table 10.1 shows the causes of intelligibility failure among Yoruba speakers, Table 10.2 for Hausa speakers, Table 10.3 the causes of intelligibility failure for all the speakers. At the foot of Tables 10.1 and 10.2 it will be seen that there is some variance between the order based on the speakers' % score and the order based on the number of listener failures. This is because the speakers' % score, as explained in Chapter 8.2, was based on the number of correct units. In some cases incorrect units contained more than one error.

For both Yoruba and Hausa speakers mispronunciation of vowels is the largest single cause of intelligibility failure, accounting for 18.3% and 20.9% of errors respectively. This is closely followed by incorrect rhythm (16.6% and 18.4% respectively) and incorrect word stress (17.9% and 9.4%). Elision involving the disappearance of phonemes is also an important cause of unintelligibility, while mispronunciation of consonants and consonant clusters is of lesser importance. Incorrect lexis and syntax constitute a relatively minor cause of intelligibility failure, which is to be expected given the level of education of the speakers.

10.5 Summary of causes of error - 4 groupings

While the division of intelligibility failure into 12 categories is a useful first step, this classification does not bring out clearly the broad areas of difficulty for Nigerian speakers. Many of the categories are closely related, e.g. rhythm and word stress, vowels and diphthongs, but were separated in the first instance to facilitate description of the phonetic features involved. The 12 categories of error can now be more usefully rearranged into four groupings as follows:

Table 10.1 Causes of intelligibility failure among Yoruba speakers

(Figures relate to the number of listener failures in each category)

	Y4	Y2	Y11	Y1	Y8	Y7	Y9	Y5	Y12	Y10	Y3	Y6	Total
1. Mispronunciation of vowels	2	10	20	35	18	34	35	15	30	37	53	24	313
2. Incorrect word stress	2	12	22	6	30	15	16	58	19	47	27	52	306
3. Incorrect rhythm (including rhythmic compression)	18	5	4		31	52	6	38	26	26	45	33	284
4. Incorrect (i) Phonemes elision (ii) Syllable	12	6	26 4	14	18	6 5	11	16	25	29	25 14	16 10	204) 33) 237
5. Mispronunciation of consonants		4	16	23	5	7	19	8	13	9	40	12	156
6. Mispronunciation of consonant clusters		2	6	9		3	19	6	30	19	21	21	136
7. Mispronunciation of diphthongs	5	13		9		7	6		11	15	4	9	79
8. Incorrect, unusual and unfamiliar lexis	2			4	11	11	7	3	9	4	7	13	71
9. Incorrect phrasing				10			22		6		9	6	53
10. Incorrect and unusual syntax		2	3	10							8	19	42
11. Metathesis		3					4			8		12	27
12. Incorrect assimilation									2				2
Total no. of failures	41	57	101	120	113	140	145	144	171	194	253	227	1,706
Speaker's score %	83.4	82.5	71.9	64.2	63.6	61.6	56.2	55.4	45.5	40.7	31.3	29.9	

Table 10.2 Causes of intelligibility failure among Hausa speakers

(Figures relate to the number of listener failures in each category)

	H6	H3	H5	H10	H4	H12	H2	H9	H8	H1	H7	H11	Total
1. Mispronunciation of vowels	5	11	18	10	13	8	27	22	26	22	33	28	223
2. Incorrect rhythm (including rhythmic compression)		10	7			13	16	22	25	14	57	33	197
3. Incorrect (i) Phonemes elision (ii) Syllable					10 9	7	8 13	22	15	8	10	11 7	81) 39) 120
4. Incorrect word stress	6		5	4		6	6	10		22	14	28	101
5. Mispronunciation of consonants	4		3	4	9	11	4		2	13	14	22	86
6. Incorrect, unusual and unfamiliar lexis		2		5		3	7	13		11	10	22	73
7. Mispronunciation of consonant clusters			2	9	8	11		10		2	18		60
8. Mispronunciation of diphthongs		4		7	8	4	12	5	8	5	5		58
9. Incorrect and unusual syntax		4	9	7			3	5	4	5	9	12	58
10. Incorrect phrasing			7		10	5	3	6			7	10	48
11. Incorrect assimilation									18		12	5	35
12. Metathesis											10		10
Total number of failures	15	31	51	46	67	68	99	115	98	102	199	178	1,069
Speaker's score %	92.7	86.2	84.0	81.2	75.6	72.8	72.6	71.6	66.6	65.9	48.4	42.8	

Table 10.3 Summary of causes of intelligibility failure in connected speech

(Figures relate to the number of listener failures in each category)

	Yoruba Speakers No.	%	Hausa Speakers No.	%	Total No.	%
1. Mispronunciation of vowels	313	18.3	223	20.9	536	19.3
2. Incorrect rhythm (including rhythmic compression)	284	16.6	197	18.4	481	17.3
3. Incorrect word stress	306	17.9	101	9.4	407	14.7
4. Incorrect elision (i) Phonemes (ii) Syllable	204) 33) 237	13.9	81) 39) 120	11.2	285) 72) 357	12.9
5. Mispronunciation of consonants	156	9.1	86	8.0	242	8.7
6. Mispronunciation of consonant clusters	136	8.0	60	5.6	196	7.1
7. Incorrect, unusual and unfamiliar lexis	71	4.1	73	6.8	144	5.2
8. Mispronunciation of diphthongs	79	4.6	58	5.4	137	4.9
9. Incorrect and unusual syntax	42	2.5	58	5.4	106	3.8
10. Incorrect phrasing	53	3.1	48	4.5	101	3.6
11. Metathesis	27	1.6	10	0.9	37	1.3
12. Incorrect assimilation	2	0.1	35	3.3	37	1.3
	1,706	99.8	1,069	99.8	2,775	100.1

Table 10.4

Causes of Intelligibility failure - 4 groupings
(Figures relate to number of listener failures in each category)

	Yoruba speakers												Yoruba Total
	Y4	Y2	Y11	Y1	Y8	Y7	Y9	Y5	Y12	Y10	Y3	Y6	
1. Rhythmic/stress													
(a) Incorrect rhythm	18	5	4		31	52	6	38	26	26	45	33	284
(b) Incorrect word stress	2	12	22	6	30	15	16	58	19	47	27	52	306
(c) Incorrect elision (ii)			4			5					14	10	33
(d) Incorrect phrasing				10			22		6		9	6	53
MEAN: 56.3	20	17	30	16	61	72	44	96	51	73	95	101	676 (39.6%)
2. Segmental													
(a) Mispronunciation of vowels	2	10	20	35	18	34	35	15	30	37	53	24	313
(b) Mispronunciation of consonants		4	16	23	5	7	19	8	13	9	40	12	156
(c) Mispronunciation of diphthongs	5	13		9		7	6		11	15	4	9	79
MEAN: 45.7	7	27	36	67	23	48	60	23	54	61	97	45	548 (32.1%)
3. Phonotactic													
(a) Incorrect elision (i)	12	6	26	14	18	6	11	16	25	29	25	16	204
(b) Mispronunciation of consonant clusters		2	6	9		3	19	6	30	19	21	21	136
(c) Metathesis		3					4			8		12	27
(d) Incorrect assimilation									2				2
MEAN: 30.8	12	11	32	23	18	9	34	22	57	56	46	49	369 (21.6%)
4. Lexical/syntactic													
(a) Lexis	2			4	11	11	7	3	9	4	7	13	71
(b) Syntax		2	3	10							8	19	42
MEAN: 9.4	2	2	3	14	11	11	7	3	9	4	15	32	113 (6.6%)
TOTAL													1,706 (99.9%)

Table 10.4 (continued)

	Hausa speakers H6	H3	H5	H10	H4	H12	H2	H9	H8	H1	H7	H11	Hausa Total	TOTAL Yoruba and Hausa speakers	Mean
1. Rhythmic/stress															
(a) Incorrect rhythm		10	7			13	16	22	25	14	57	33	197		
(b) Incorrect word stress	6		5	4		6	6	10		22	14	28	101		
(c) Incorrect elision (ii)					9		13				10	7	39		
(d) Incorrect phrasing			7		10	5	3	6			7	10	48		
MEAN: 32.1	6	10	19	4	19	24	38	38	25	36	88	78	385 (36.0%)	1,061 (38.2%)	44.2
2. Segmental															
(a) Mispronunciation of vowels	5	11	18	10	13	8	27	22	26	22	33	28	223		
(b) Mispronunciation of consonants	4		3	4	9	11	4		2	13	14	22	86		
(c) Mispronunciation of diphthongs		4		7	8	4	12	5	8	5	5		58		
MEAN: 30.6	9	15	21	21	30	23	43	27	36	40	52	50	367 (34.3%)	915 (33.0%)	38.2
3. Phonotactic															
(a) Incorrect elision (i)					10	7	8	22	15	8		11	81		
(b) Mispron. of consonant clusters			2	9	8	11		10		2	18		60		
(c) Metathesis											10		10		
(d) Incorrect assimilation									18		12	5	35		
MEAN: 15.5			2	9	18	18	8	32	33	10	40	16	186 (17.4%)	555 (20.0%)	23.2
4. Lexical/syntactic															
(a) Lexis		2		5		3	7	13		11	10	22	73		
(b) Syntax		4	9	7			3	5	4	5	9	12	58		
MEAN: 10.9		6	9	12		3	10	18	4	16	19	34	131 (12.2%)	244 (8.8%)	10.2
TOTAL													1,069 (99.9%)	2,775 (100%)	

1.	Rhythmic/stress:	incorrect rhythm (including rhythmic compression), incorrect word stress, incorrect elision (involving the disappearance of a syllable) and incorrect phrasing.
2.	Segmental:	mispronunciation of vowels, consonants and diphthongs.
3.	Phonotactic:	incorrect elision (involving the disappearance of a phoneme), mispronunciation of consonant clusters, metathesis and incorrect assimilation.
4.	Lexical/syntactic:	incorrect, unusual and unfamiliar lexis, and incorrect and unusual syntax.

Table 10.4 shows the intelligibility failures, listed speaker by speaker, according to the four groupings. It may be summarised as follows:

Table 10.5 Summary of causes of intelligibility failure

Note: In this table Mean = average number of failures per speaker; % = percentage of total failures.

	Yoruba		Hausa		Total	
	Mean	%	Mean	%	Mean	%
1. Rhythmic/stress	56.3	39.6	32.1	36.0	44.2	38.2
2. Segmental	45.7	32.1	30.6	34.3	38.2	33.0
3. Phonotactic	30.8	21.6	15.5	17.4	23.2	20.0
4. Lexical/syntactic	9.4	6.6	10.9	12.2	10.2	8.8
	142.2	99.9%	89.1	99.9%	115.8	100.0%

From this summary it will be seen that the two major causes of intelligibility failure are due to rhythmic/stress and segmental errors. The largest single group of errors in the case of both Yoruba and Hausa speakers lies in the rhythmic/stress grouping. The importance of this type of error is particularly marked in the case of the Yoruba speakers (a mean of 56.3 intelligibility failures per speaker) and it is the greater number of errors in this field which causes the Yoruba speakers as a group to be considerably less intelligible than the Hausa

speakers as a group. It will also be noted that the total mean number of intelligibility failures per Yoruba speaker is 142.2 as opposed to 89.1 per Hausa speaker. Hausa speakers perform better than Yoruba speakers in all the groupings except for the relatively minor one (from the point of view of intelligibility) of lexical/syntactic errors.

The importance of rhythmic/stress and segmental factors in intelligibility are further brought out in the breakdown of errcrs shown in the following table.

Table 10.6

Categories of performance among Yoruba and Hausa speakers

	Good (0-19 errors)	Moderate (20-39 errors)	Poor (40+ errors)	Total
Rhythmic/stress				
Yoruba	2	2	8	12
Hausa	5	5	2	12
	7	7	10	24
Segmental				
Yoruba	1	4	7	12
Hausa	2	6	4	12
	3	10	11	24

Again, this table brings out the relatively poorer performance of Yoruba speakers in the rhythmic/stress field. On a chi square test significantly more Yoruba at the 5% level make 40+ errors than do Hausa speakers. Allowing for the small sample of speakers, this suggests once more that rhythmic/stress problems are the largest contributory factor to the lesser intelligibility of the Yoruba speakers.

By contrast, there is a similar number of moderate and poor Yoruba and Hausa speakers in the segmental field and there is no significant difference in the proportions making 40+ errors. This tends to confirm that segmental failures are not as important a factor in intelligibility as are rhythmic/stress failures.

Finally, if we do a rank order correlation between the speakers' total intelligibility scores (foot of Tables 10.1 and 10.2) and the individual speakers' errors in the rhythmic/ stress and segmental fields, the relative importance of these two groupings is further brought out, as shown in the table below:

Table 10.7 Rank order correlation between intelligibility scores and number of rhythmic/stress and segmental errors

	Intelligibility score order	Fewest errors rhythm/stress	Fewest errors segmental
Yoruba speakers	1	3	1
	2	2	4
	3	4	5
	4	1	11
	5	7	2
	6	8	7
	7	3	9
	8	11	2
	9	6	8
	10	9	10
	11	10	12
	12	12	6
		Correlation .84	Correlation .60
Hausa speakers	1	2	1
	2	3	2
	3	4	3
	4	1	3
	5	4	4
	6	6	5
	7	9	10
	8	9	6
	9	7	8
	10	8	9
	11	12	12
	12	11	11
		Correlation .87	Correlation .93

From this table it will be seen that the correlation between the individual speakers' errors in the rhythmic/stress field and the speakers' total intelligibility scores is .84 for Yoruba speakers and .87 for Hausa speakers. These high correlations indicate that those who make the fewest errors in

the rhythmic/stress field are the most easily comprehended and vice versa. The position is not the same, however, as far as segmental errors are concerned. We find the very high correlation of .93 in the case of Hausa speakers, which indicates that the most easily understood Hausa speakers also make the fewest segmental errors. This is not true of the Yoruba speakers, however, where the rank order correlation between the number of segmental errors and individuals' total intelligibility score is only .60. Some Yoruba speakers who make relatively few segmental errors are nevertheless poorly understood. This again tends to indicate the prime importance of rhythmic/stress factors in intelligibility. The intelligibility of Yoruba speakers depends on their degree of skill in handling of English rhythm and stress and not so much on their pronunciation of individual phonemes.

10.6. Conclusion

In conclusion, we may state that rhythmic/stress errors (38.2% for all speakers), involving incorrect rhythm, incorrect word stress, elision of syllables and incorrect phrasing, present the greatest barrier to the intelligibility of Nigerian speakers of English, and, in particular, Yoruba speakers. Secondly, segmental errors (33.0% for all speakers), involving mispronunciation of individual phonemes, are the next most important factor in intelligibility failure. Thirdly, various phonotactic errors (20.0% for all speakers), involving incorrect elision of phonemes, mispronunciation of consonant clusters, metathesis and incorrect assimilation, are of lesser importance to the intelligibility of Nigerian speakers. Fourthly, lexical and syntactic errors (8.8% for all speakers) are of minor importance in the case of educated Nigerian speakers. These conclusions, based on the actual phonetic errors made by the speakers tally closely with the statistical conclusions arrived at in the preceding chapter, namely that stress/rhythm is the major component of all aspects of intelligibility.

CHAPTER 11

The Causes of Intelligibility Failure: Rhythmic/Stress Failures

11.1 Introduction

In this and the following two chapters a summary is made of the phonetic causes of intelligibility failure, categorised according to the four groupings discussed in Chapter 10. The conclusions are primarily based on the speakers' performance in the Connected Speech tests, corroborated, when relevant, by scores and findings in Test III (Phonemes) and Tests IVA and IVB (Stress and Intonation). Where the results in Tests III and IVA, B do not correspond with conclusions arrived at from an analysis of failures in connected speech, this is indicated; but performance in connected speech is considered to be the fundamental basis on which judgements about intelligibility failure should be made.

11.2 Incorrect rhythm (including rhythmic compression)

In Chapter 10 it was seen that rhythmic/stress errors were the major cause of intelligibility failure among Nigerian speakers. In connected speech these accounted for 39.6% and 36.0% of the total failures made by Yoruba and Hausa speakers respectively, and the mean number of failures per speaker was 56.3 in the case of Yoruba and 32.1 in the case of Hausa speakers.

The characteristic rhythmic pattern of English whereby the rhythmic beats occur at fairly equal intervals of time was generally lacking in the speech of most of the Nigerian speakers. Whereas in English it is mainly content words that receive stress, unlike form words which are normally unstressed, these distinctions were by no means consistently made by the Nigerian speakers. Two main types of variations from the normal rhythmic pattern of English were noted.

First, particularly with Yoruba speakers, there were a number of instances of intelligibility failure caused by stressing too many syllables in the utterance, resulting in a staccato-like rhythm confusing to listeners. In these cases

both content and form words tended to be stressed indiscriminately. Among the latter, instances of stress on personal pronouns, prepositions and articles were noted.

The second variation, more common with Hausa than with Yoruba speakers, occurred when words that would normally be stressed in English were left unstressed, resulting in utterances that contained too few stressed syllables. In consequence, important content words, signalling meaning, were not interpreted correctly or were completely misunderstood by the listeners. Examples were noted of nouns, verbs, adjectives and adverbs being unstressed; there were several examples of intelligibility failure arising from the stressing of auxiliary verbs at the expense of the main verb e.g. should not be made, etc.

In addition to variations from normal English rhythmic patterns, variations in quantity and quality also affected intelligibility. Thus distinctions between /i:, I/ were inconsistent, there was confusion between /eɪ/ and /e/ and generally speaking a complete absence of weak forms.

Rhythmic compression, as explained in Chapter 10, is the term used to describe those instances when whole phrases or clauses were entirely misunderstood by the majority of listeners, due to the telescoping of syllables resulting in distorted rhythmic patterns. In these cases few clues were provided to enable listeners to discern identifiable linguistic units.

A selection of the many instances of incorrect rhythm leading to intelligibility failure now follows:

11.2.1 Too many stresses

we rely on [ˈwiri ˈlai ɔ̃] (Y3)
for choosing [ˈfɔ ˈtʃusin] (Y5
in order to keep [ĩn ˈɔdə ˈtu ˈkip] (Y5)
the choice of their son [ˈðɪ ˈtʃɔiz ˈɔv ˈðɛ ˈsɔn] (Y5)
could break a family [kud ˈbrek ˈei famˈili] (Y5)
I am not given too much work to do [ˈai ˈam ˈnɔt
ˈgivIn tu ˈmɔʃ ˈwɔk ˈtu ˈdu] (Y6)
trying to do about it [ˈtraiin tə du ˈabaut ˈit] (Y6)
he welcomed new students [hi ˈwɛlˈkɔmd nju stuˈdɛ̃nz] (Y7
they will only tell you [ðe ˈwI ˈõnli ˈtɛ ˈju] (Y12)

come and queue up [ˈkʌm ˈɛnd kju ˈʌp] (H7)
teaching us [ˈti:tʃIn ˈʔʌs] (H7)

11.2.2 Too few stresses

know the time [ˈno dI tãim] (Y2)
let's say [ˈles se] (Y2)
we're being trained [wia ˈbin trend] (Y3)
we're being made [wia ˈbin med] (Y3)
get away [ˈget əwe] (Y4)
both couples [boθ ˈkɔpũz] (Y5)
get used (to) [ˈgɛt just] (Y5)
having a very nice time [havin ə vəri ˈnais taim] (Y6)
I came first [ai ˈkem fəst] (Y6)
can be made [ˈkã bi met] (Y8)

in one place [In ˈwã ples] (H1)
very day [ˈvɛrI de] (H1)
in order to meet [n odə tu ˈmi:t] (H1)
hockey players [ɔkI ˈpleəs] (H1)
Red Cross Society [ˈrɛd krɔs soˈsaitI] (H1)
such a way [ˈsatʃ ə we] (H2)
to eat food [tʊ ˈi:t fʊd] (H3)
best way [ˈbɛst we] (H3)
how she appears [hau ˈʃi əpiəz] (H5)
little or nothing [litəl ˈə: ˈnʌθIn] (H5)
come back [ˈkʌm bæʔ] (H7)
what is usually done [hwət Is juˈʒʊəlI dən] (H7)
the first impression [ðI fas imˈprɛʃIn] (H7)
School Certificate [skul ˈsə:tIfkɛt] (H8)
type of wife I want [ˈtaip v waiv ai ˈwənt] (H8)
somebody like that [səmˈbɔdI laik ðət] (H11)
should not be made [ʃʊd nɔt ˈbi: med] (H11)
fortunate to have been given [fɔˈtjʊnət tuv bI givn] (H11)

11.2.3 Rhythmic compression

the life here is [di ˈlaifhɛəs] (Y3)
it will be necessary [itũbi ˈnɛ̃zri] (Y3)
by way of [ˈbəweiəv] (Y4)
not knowing what to do [ˈnɔ̃nõĩ ˈwɔtuˈdu] (Y7)
not disobeying [ˈnɔdisoˈbẽ] (Y7)
after having seated myself [aftəavĩ siˈte maiˈsɛlf] (Y7)
I started school [ai ˈstatɛdskũ] (Y8)
in point of fact [mpɔ̃inə ˈfakt] (Y9)
not even up to the age [ˈnɔtivin ˈɔptudiˈedʒ] (Y10)
I come to the age of [ai ˈkɔmˈtudi ˈedʒəv] (Y10)
forced on me [fɔsãmi] (Y10)
as if one [azˈivwɔ̃] (Y12)

choosing a wife [ˈtʃyzIʔəwaif] (H8)
for beauty only [foˈbju:tIɔnlI] (H8)
if at all one is determined [If aˈtolwɛ̃ Is dIˈtə:mIn] (H9)
go and get in contact [goun gɛt ˈkɔnt ə k] (H11)
changes that are occurring [ˈtʃendʒIz ðæ taʔ əˈkə:rin] (H11)

11.3 Incorrect word stress

The errors in this category were caused by the speakers' deviation from the normal English accentual pattern within the word, often in combination with incorrect vowels or absence of reduced forms of vowels. Thus the deviation was usually a complex of accentual and phonemic errors with the accentual deviation being prime. For Yoruba speakers in particular this was a major cause of intelligibility failure, and Yoruba speakers as a whole made three times as many errors in this area as Hausa speakers.

The deviations from the normal English accentual pattern took two main forms: firstly, movement of the accent away from the first syllable onto the second, third or fourth syllable of the word; and secondly, the substitution of two primary accents in words normally bearing only one accent, or one primary and one secondary accent. In the case of the Yoruba speakers these two deviations are almost equally divided; with the Hausa speakers there is a slight tendency towards producing two equally accented syllables in the word.

A few instances were noted of the accent being shifted onto the first syllable in words normally bearing the accent on the second or succeeding syllables. There were also two occasions when failure to use the proper contrastive stress on 'disadvantage' led to intelligibility failure.

Examples of all word stress errors noted now follow:

11.3.1 Movement of accent away from first syllable onto succeeding syllables

secondary [sɛ'kɔndrI], heeded [hi:'ded] (Y1)
parents [pe'rẽns], movement [muv'ment] (Y3)
interval [intə'val] (Y4)
normally [nɔ'mali], usually [ju'ʒiali , ju'ʒali],
interesting [in'trɛstin] (Y5)
socially [so'ʃali], hostel [ho'stel] (Y6)
prefect [prI'fɛkt, prɪ'fɛ] (Y7)
into [in'tu], maketh [me'kɛ θ], actually
[aktʃu'ali] (Y8)
fathers [fa'ðaz], guidance [gai'danz] (Y9)
brother [brɔ'da] , usual [ju'ʃal], realising
[rɛa'laisiŋ] (Y10)
reading [ri'din] (Y12)

secondary [sɛ'kandrI], football [fut'bol] (H1)
usually [ju'ʒəlI] (H2)
hostel [hɔ'stɛl] (H6)
usually [ju'ʒʊ̈elɪ̈], primary [prai'marI] (H7)
category [kə'tagərI] (H9)

11.3.2 Movement of accent away from second or third syllable

associate [aʃo'ʃiet] (Y2)
admitted [admi'ted] (Y8)
importance [impɔ'tans], recreation [rɛkrie'ʃã] (Y10)
enjoyment [ɛ̃ndʒɔi'mɛ̃] (Y12)

11.3.3 Two primary accents

physical ['fizi'kal] (Y2)
recreation ['re'krieʃn], freedom ['fri'dɔm],
campus ['kam'pɔs] (Y3)
introduced ['intro'djust] (Y5)
overbearing ['o'va'berin], environment [ɛn'vairən'ment],
reference ['rɛfɛ'rɛnz], present ['prɛ'zent],
convenient ['kɔn'viniənt], secondary ['sɛ'kɔndrI],
expected [ɛ'spek'ted] (Y6)
encountered [ŋ'kaun'tə:d], modern ['mɔ'dãn] (Y8)
enunciated [I'nanʃie'ted] (Y9)
reminding [ri'maĩ'diŋ] (Y10)
actually ['aktʃu'ali], welcome ['wɛl'kɔm],
Nigerian ['naidʒi'rãn] (Y11)
introducing ['introdju'sin], feeding ['fi'din] (Y12)

forward ['fɔ'wad], rendering ['rɛndə'riŋ],
preferred ['pri'fə:] (H1)
traditional ['tra'diʃnu], apply ['a'plai] (H5)
hostel ['hɔ'stel], properly ['prɔ'pəli] (H7)
compelled ['kɔm'pɛld] (H10)
beauty ['bju:'ti], given ['gi'vən] (H11)
sociable ['soʃe'bu], particular ['patikju'la] (H12)

11.3.4 Four primary accents

characteristic ['ka'ra'tɛ'ristik] (Y8)

11.3.5 Movement of accent towards first or second syllable

arrange ['arentʃ], economic [I'konomik] (Y5)

acquainted ['akweintId] (H1)
university ['junIvə:sI] (H6)
allow ['alau] (H11)

11.3.6 Non-use of contrastive word stress

There were two occasions when the context required the stress on dis in 'disadvantage'. This was not done and intelligibility failure resulted, listeners mostly tending to hear 'advantage'.

disadvantage [dĩzad'vantidʒ] (Y5)
disadvantage [dIzəd'ventIʒ] (H11)

11.3.7 Test IVA findings

Results in this test tended to confirm the above findings. It will be remembered that speakers were required to place the nuclear accent on the first syllable of three words (SURvey, CONtrast, PROgress) and on the second syllable of three other words (transPORT, obJECT, reCORD). An analysis of the errors made (as shown by listeners' scores) reveals the following:

Table 11.1 Summary of word stress errors in Test IVA

	Errors				Errors		
	Yoruba	Hausa	Total		Yoruba	Hausa	Total
SURvey	80	53	133	transPORT	61	30	91
CONtrast	41	43	84	obJECT	49	28	77
PROgress	46	22	68	reCORD	32	26	58
	167	118	285		142	84	226

It will be seen from these totals of errors that there were many instances of speakers producing the wrong accentual pattern, with consequent misinterpretation by listeners. It will be seen that the greatest number of errors occurred on words with the accent on the first syllable (i.e. nouns). These errors were caused by the tendency to shift the accent onto the second syllable with the result that listeners interpreted the words as verbs rather than nouns. Three other characteristics emerged in the analysis:

(i) The use of the vowels /ə, I/ in unstressed syllables was very rare in the case of both Yoruba and Hausa speakers. In the majority of cases vowels in both syllables were given their full value, often with a spelling pronunciation, e.g. [kɔn'trast], [rɛ'kɔ:d].

(ii) A number of speakers produced equal primary accents in both syllables, in conjunction with full vowel quality and quantity, resulting in such patterns as ˌconˋtrast [– \ ].

(iii) Where this was accompanied by high pitch prominence on the first syllable (usually level, but occasionally falling to mid-level) in conjunction with a low

falling nucleus on the second syllable, listeners tended to perceive the nucleus on the first syllable (i.e. they thought the word was a noun) whereas in fact the nucleus was on the second syllable. Examples of this were 'trans\port [— \] and ˊob\ject [`\].

11.3.8 Conclusion

To sum up, incorrect word stress was a major cause of intelligibility failure for both Yoruba and Hausa speakers, especially the former. The deviations were mainly two-fold: the tendency to move the accent away from the first syllable onto succeeding syllables and the tendency to substitute two equal primary accents for one primary accent, or one primary and one secondary accent. The absence of reduced forms of vowels is not in itself a serious cause of intelligibility failure.

11.4 Incorrect elision of syllables

Only a few instances of elision of syllables led to intelligibility failure, the occurrences being almost equally divided between Yoruba and Hausa speakers. The elisions noted occurred mainly on unstressed syllables in post-nuclear position, involving /ə/ or /I/. Elision of syllables at word boundaries were few, the elided syllables again mainly involving unstressed /ə/ or /I/.

11.4.1 Elision of unstressed syllables (post-nuclear)

body [ˈbodʰ] (Y7)
possible [ˈposɯ̈] (Y3)
tightening [ˈtaitiŋ] (H2)
natural [ˈnɛtʃər] (H4)
government [ˈgʌvənt] (H7)

11.4.2 Elision of unstressed syllables (pre-nuclear)

qualification [ˈkwɔlIˈkeʃn] (Y11)

11.4.3 Elision at word boundaries

social aspect [soˈʃaspɛkt] (Y3)
Islamic education [Isl̩æʔ ɛdjuˈkeʃn] (H4)
you became married [ˈju kəm ˈmærIt] (H11)
are occurring [ɑ:ˈkə:riŋ] (H2)

11.4.4 Elision of stressed syllables

people [ˌ'pũ˜] (Y6)

11.5 Incorrect phrasing

The examples noted in this category occurred chiefly when the speakers (more commonly Hausa speakers) hesitated or pondered over their choice of words. This resulted in interrupted rhythm and incorrect intonational groupings. In addition, the usual English hesitation features were lacking. The combination of all these factors led to intelligibility failure. The examples noted were as follows:

there was/ a case [dɛa 'wɔs/ e'kes] (Y1)
before I/ entered [bi'fɔai/ 'enta] (Y1)
where/ everything was/ virtually made [wɛa/
ɛvri'θin 'wɔz/ 'vatjuli'med] (Y3)
not/ what/ I admire ['nɔt/ 'wɔt/ ai ad'maiə] (Y9)
university/ is a place [juni'vasIti/ 'is e 'ples] (Y12)

might have been/ wooed [mait həv 'bin/ 'wud] (H2)
I still/ can remember his name [ai stIl/ kæ
rI'mɛmba hIs 'nem] (H4)
to solve my/ my own/arithmetic [tʊ 'sɔlv mai/
mai 'ɔn/ ə'rIθmɛtIk] (H4)
come/ and solve [kʌ'mənd/ 'sov] (H5)
how/ I hope [hau/ ai 'houp] (H5)
close to our/ place ['klos tʊ 'a/'ples] (H7)
three hours/ of/ writing [θri 'az/ ɔv/ 'raitIn] (H7)
more than/ those ['moðən/'ðous] (H9)
they p.....change a/ an idea [ðe pə'tʃendʒ ə/
an 'aidiə] (H11)
for university/ students [fɔ jʊnI'vasi/ 'studənz] (H12)
most of/ what you/ do ['mos ɔ/ wɔt juʔ/ 'du:] (H12)

11.6 Intonation

All the rhythmic/stress failures discussed so far in this chapter - incorrect rhythm,. incorrect word stress, incorrect elision of syllables and incorrect phrasing - were usually accompanied, to a greater or lesser extent, by wrong intonation groupings and patterns. However, it was not possible to state categorically that these intelligibility failures were solely or mainly attributable to incorrect intonation, rhythmic and accentual deviations being prime.

In this section the discussion of intonation difficulties for Nigerian speakers is based on the results of Tests IVA and IVB, described in Chapter 5. A complete summary of the results is shown in Appendix IV. It will be remembered that these tests had two main aims: to test the ability to place the nuclear accent correctly in words and sentences, and to test the ability to convey different attitudes by means of varying intonation contours. It was shown in Chapter 9 that the speakers had considerably more difficulty with the first of these tasks and, on the basis of the listeners' responses, had a mean score of only 40.4%, with a range of 57.5% to 27.6% . On the other hand, the scores for the test of attitude and intonation were considerably higher, with a mean score of 60.1% and a range of 81.5% to 21.9%. In this section a summary is given of the main characteristics of Nigerian English intonation as revealed by an analysis of the taped recordings and an attempt is made to pinpoint those particular areas that led to intelligibility failure.

11.6.1 System of notation

It was realised that it was not possible to fit Nigerian English intonation contours into systems devised for RP English. Instead, an ad hoc system was used at first until patterns began to emerge as the analysis proceeded. Finally, the following notation system was arrived at, which shows the broad features of Nigerian English intonation. It must be stated, however, that the system has the defect of not revealing the range of Nigerian English pitch contours. However, an attempt is made to illustrate this range in diagrammatic intralinear form in the examples on the following pages.

The main features of Nigerian English intonation are shown by the following symbols:

\ = low falling nuclear syllable

\ = high falling nuclear syllable

/ = low rising nuclear syllable

/ = high rising nuclear syllable

^ or ^ = rise-fall nuclear syllable

↘ = stressed high pitch non-nuclear syllable, with the following unstressed syllables descending but not reaching the lowest level

↗ = stressed low pitch non-nuclear syllable, with the following unstressed syllables ascending but not reaching the highest level

— = high, level pre-head

ˈ = stressed, high pitch accented syllable, with the following stressed syllables relatively lower. The step-down is not always as regular as in RP English.

ˌ = stressed, low pitch accented syllable.

11.6.2 Placement of nucleus in sentences (sentence stress)

It will be recalled from Chapter 5 that the speakers were required to contradict a statement made by the researcher and to place the nucleus in one of three places in the sentences selected as responses, e.g.

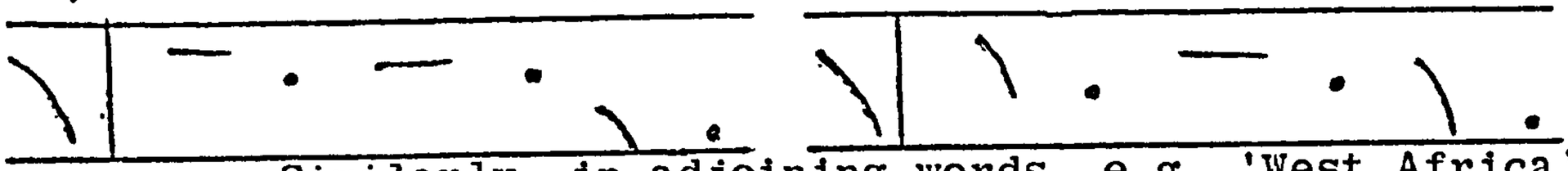
↘No, ↘John ˌmotored to ˌLondon
↘No, ˈJohn↘motored to ˌLondon
↘No, ˈJohnˈmotored to↘London

The 24 speakers produced 360 spoken examples of this and similar types of sentence. Assuming all the speakers had replied correctly all the time, one-third or 120 of the sentences should have had the nucleus placed on the final stressed syllables. One of the striking characteristics of the Nigerian speakers' replies was that the nucleus was placed on the final stressed syllable no less than 331 times, i.e. 92% of the time. The difference between the performance of the Yoruba and Hausa speakers was minimal, the former placing the nucleus on the final stressed syllable on 169 occasions, the latter on 162 occasions. The same rhythmic pattern was used by the speakers irrespective of the contrast they were required to make. All the Nigerian speakers, then, had the greatest difficulty in placing a high falling nuclear tone on the first or second stressed syllables in the sentences provided for them, thereby leading to intelligibility failure, as listeners were unable to interpret which contrast was being made.

Other characteristics that emerged from the analysis were as follows:

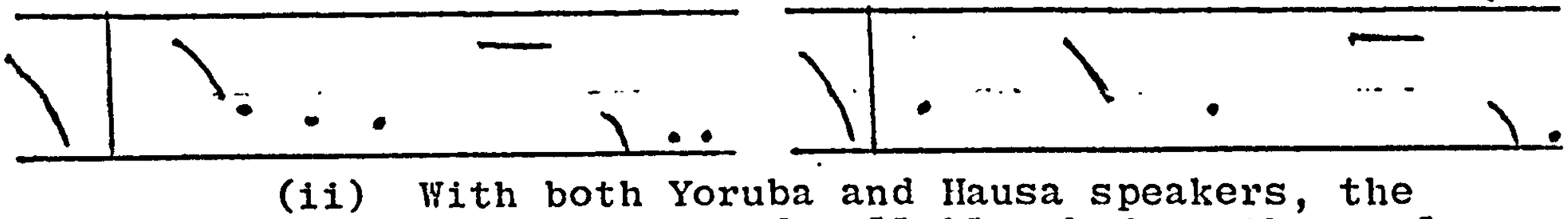
(i) As in the case of word stress high pitch prominence tended to shift the stress pattern of a word or adjoining words (at least to the listener's ears). This was very apparent in the word 'motored' as illustrated below, a characteristic of the speech of 8 of the Yoruba speakers, e.g.

`No, 'John mo'tored to `London `No, ↘John mo'tored to `London



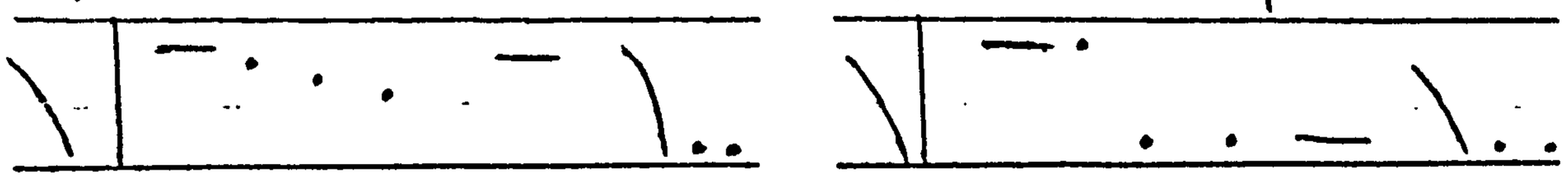
Similarly, in adjoining words, e.g. 'West Africa', 'March 7th', some listeners tended to perceive the nucleus on 'West' and 'March', whereas in fact the nucleus (a low fall) was on 'Africa' and '7th'. The high pitch prominence of 'West' and 'March' was responsible for this. This occurred with both Yoruba and Hausa speakers, e.g.

`No, ↘Ghana is in 'West `Africa `No, it's ↘Wednesday, 'March `7th



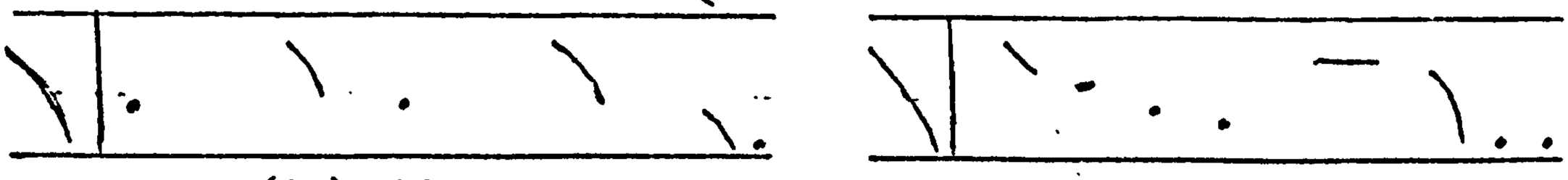
(ii) With both Yoruba and Hausa speakers, the step-down of stressed syllables before the nucleus was often irregular, unlike RP English. Successive stressed syllables tended to descend either by very short or by very wide intervals e.g.

`No, 'Ghana is in 'West `Africa `No, 'Ghana is in 'West `Africa

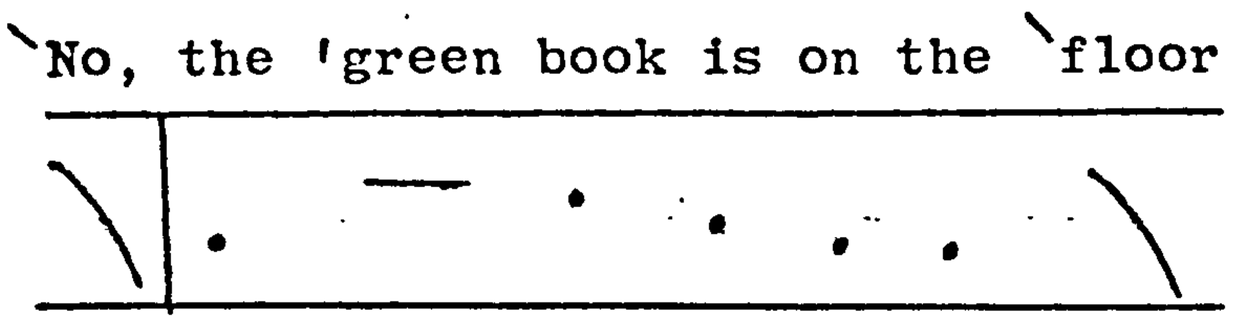


(iii) With both Yoruba and Hausa speakers there was a strong tendency for unstressed syllables to descend after a preceding high stressed, slightly falling syllable. This fall did not usually reach the lowest level, e.g.

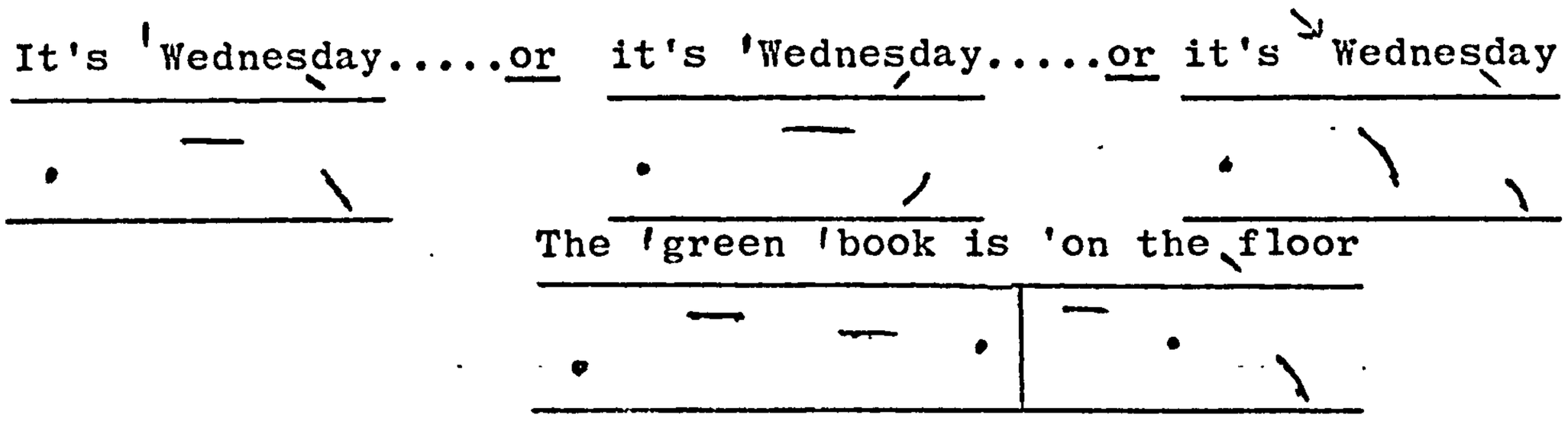
`No, it's ↘Wednesday, ↘March `7th `No, ↘Ghana is in 'West `Africa



(iv) There was a tendency (more common with the Yoruba than the Hausa speakers) to unstress words that would normally be stressed in RP. This was particularly the case with the adjective plus noun combination 'green book' even when no special emphasis was meant to be attached to the adjective, e.g.



(v) On the other hand, a number of speakers introduced extra stressed syllables, which would not normally be stressed in RP. Some Yoruba speakers produced two stresses in 'Wednesday', while some Hausa speakers gave undue prominence to the preposition in 'on the floor', e.g.



11.6.3 Attitude and intonation

It was shown in Chapter 9 that the Nigerian speakers managed to convey attitudes through intonation more successfully than they did with the accurate placement of the nucleus, involving contrastive stress. Although the speakers' intonation patterns were often at variance with RP patterns, the fact that the overall mean score in this test was over 60% indicates that meaning can be conveyed to a considerable extent in spite of these divergences from the norm. The main exception to this lay in the speakers' treatment of question tags (items 32 and 33), which were almost invariably misinterpreted by the listeners and also, to a lesser extent, items 26 and 27 involving complete and incomplete lists of choices, which again resulted in many cases of misinterpretation.

Let us now examine general trends that emerge from the analysis.

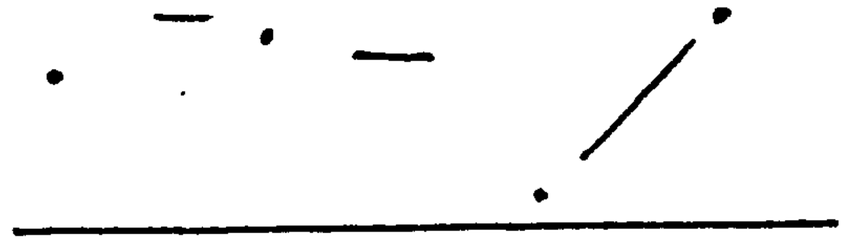
Items 22 and 23, involving a statement and a surprised question, anticipated a falling and a rising nucleus respectively. In item 22 all the Yoruba speakers produced a fall of some kind (8 low falls, 3 high falls and 1 rise-fall), as did all the Hausa speakers (11 low falls and 1 rise-fall). In item 23, 9 Yoruba and 9 Hausa speakers produced a high rise, as hoped for. One of the characteristics common to many

speakers was that, in addition to a change in voice quality, a much wider pitch range was used in item 23 to convey surprised questioning, e.g.

22 I'm 'going 'home tomorrow

(statement)

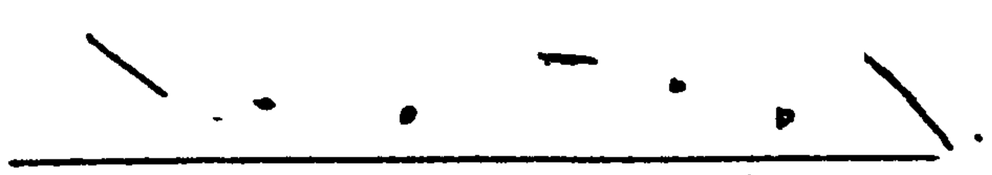
23 I'm 'going 'home tomorrow?



(surprised question)

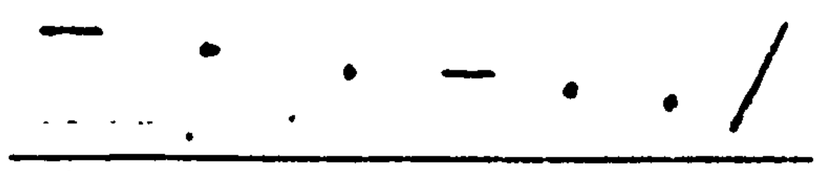
Items 24 and 25 - information questions, the one normal, the other surprised - anticipated a falling nuclear tone (item 24) and a rising or fall-rise nucleus (item 25). In item 24 all the Yoruba and all the Hausa speakers produced falling nuclei, each with 9 low falls and 3 high falls. There was a considerable divergence, however, in item 25. The strong tendency for Yoruba speakers was to produce a falling nucleus to show surprise - 8 high falls, 1 low fall and 1 rise-fall, with only 2 speakers producing a high rise. With the Hausa speakers, 5 high rises and 3 low rises were obtained. In spite of these different patterns, misinterpretation on the part of the listeners was approximately equal for both groups of speakers. Typical patterns for item 25 are shown below:

25 ↘(Wha)t are you 'going to ↘do?



(Yoruba) (surprise)

25 'What are you 'going to /do?



(Hausa) (surprise)

Two further points require comment. First, the pitch range of item 25 was, with many speakers, often very much widened, outside the range of normal RP. Secondly, a number of speakers, more Yoruba than Hausa, tended to elide the word 'what' in items 24 and 25, which became reduced to [t].

Items 26 and 27 aimed at differentiating between a complete list of choices (with falling nuclei) and an incomplete list of choices (with rising nuclei). In item 26 (expected low falls) the majority of the speakers used low rising nuclei on the final element - all 12 Yoruba speakers and 6 of the Hausas, which caused over half the listeners to

misinterpret the implications of this item. In item 27, 9 of the Yoruba speakers correctly used a low rising final nucleus, whereas 8 of the Hausa speakers used a low falling final nucleus. Consequently, on this item, too, some 40% of the listeners misinterpreted its implications.

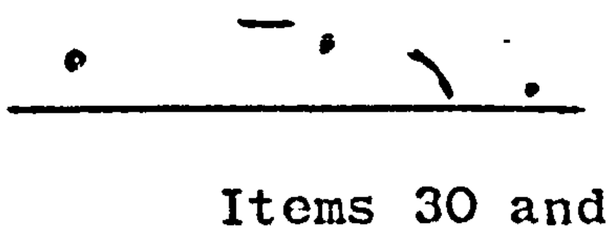
Two characteristics, common to a number of both groups of speakers, were noted. Firstly, there was a tendency to pronounce 'would you like' on an ascending tone, thus:

↗Would you like orange or lime or lemon?

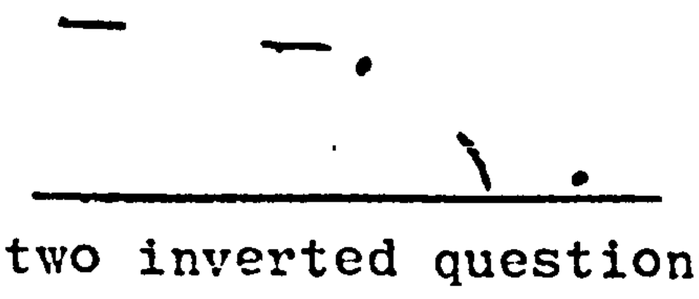
Secondly, with many speakers 'would' was elided to [d], which at times became identical to 'do you like'.

Items 28 and 29 attempted to elicit a positive statement and a statement implying doubt, anticipating a falling and a fall-rise nucleus respectively. In item 28, 10 of the Yoruba speakers produced falls (8 low and 2 high falls), as did all 12 of the Hausa speakers (9 low, 2 high and 1 rise-fall). In item 29 only one speaker produced a fall-rise - the majority producing falls of various sorts (Yoruba speakers 5 low and 4 high falls, Hausa speakers 7 low and 3 high falls). In spite of this, approximately two-thirds of the listeners interpreted this statement as one expressing doubt. Both groups of speakers tended to use a very much wider pitch range for item 29, accompanied by a lengthening of the syllables. Two typical patterns were:

28 She's 'very ˎpretty



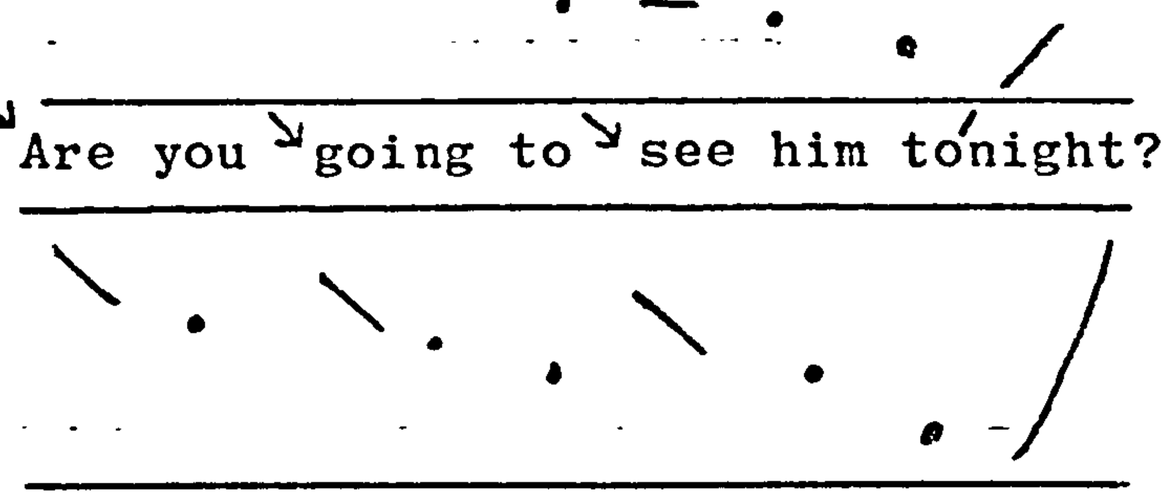
29 She's 'very ˎpretty (doubtful)



Items 30 and 31 were two inverted questions, one to be spoken in a matter-of-fact voice, the other expressing surprise. In item 30 the majority of speakers used low rises, as expected, (Yoruba speakers 8 low and 3 high rises, Hausa speakers 10 low and 2 high rises). In item 31 (the surprised inverted question), 9 Yoruba and 9 Hausa produced high rises, the remainder of the speakers using low rises. In both items unstressed syllables tended to fall (the falls being greater

in the surprised question). Again, the pitch range tended to be much wider in item 31. Two examples were:

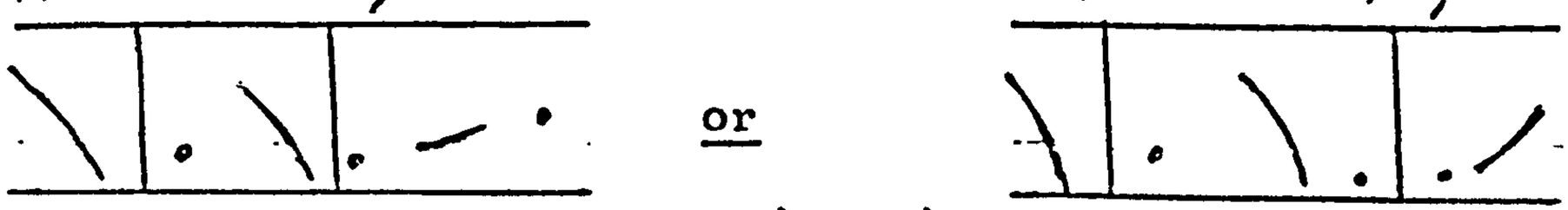
30 'Are you 'going to'see him tonight?



31 ↘Are you ↘going to ↘see him tonight? (surprise)

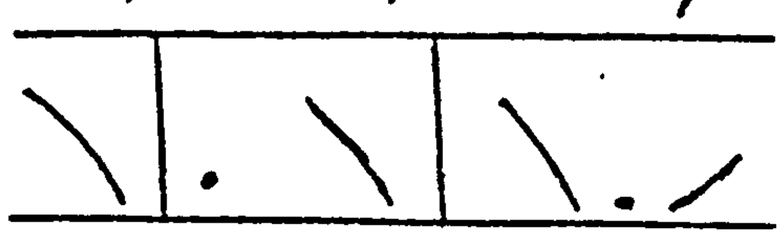
Items 32 and 33 involved the use of positive and negative question tages, both of which were intended to imply agreement with a statement previously made by the researcher. Falling nuclei were hoped for, but most speakers used a rising nucleus, implying a genuine question. These two items were therefore consistently misinterpreted, item 32 confusing 60% and item 33 over 90% of the listeners. The rising nuclei either began on the final verb and continued to rise on the following pronoun or else, particularly in item 32, there was a high fall on the final verb followed by a fully stressed final pronoun pronounced on a low, rising tone. Where the rise began on the final verb, speakers characteristically began the rise on the /z/ of 'is' and 'isn't ' and not on the initial vowel as would be normal in RP. Typical examples were:

32 `Yes, he`is, isn't he? 33 `No, he`isn't, is he?



or

32 `Yes, he `is, `isn't he?



11.7 Summary

In this chapter the rhythmic/stress errors that led to intelligibility failure have been examined and observations made on certain characteristics of the intonation of Nigerian English. Errors in the rhythmic/stress category were the major

cause of intelligibility failure among Nigerian speakers. Variations from the normal rhythmic pattern of English took two main forms. First, especially with Yoruba speakers, there was a tendency to stress too many syllables in the utterance, which resulted in a staccato-like rhythm confusing to listeners. Secondly, more common with Hausa than with Yoruba speakers, was the tendency not to stress words that would normally be stressed in English, with the result that important content words, signalling meaning, were misinterpreted by listeners. Rhythmic compression - the telescoping of syllables which resulted in distorted rhythm patterns - was also a cause of intelligibility failure.

Incorrect word stress led to many instances of intelligibility failure. Two major deviations from the normal English accentual pattern were noted: movement of the accent away from the first syllable onto the second, third or fourth syllable of the word, and the substitution of two primary accents in words normally bearing only one accent, or one primary and one secondary accent.

Incorrect elision of syllables was a minor cause of intelligibility failure, occurring mainly on unstressed syllables in post-nuclear position, involving /ə/ and /I/. Incorrect phrasing, when speakers hesitated over their choice of words, which resulted in interrupted rhythm and incorrect intonational groupings, also led to a small number of listener failures.

Although all these rhythmic/stress failures were accompanied to some extent by wrong intonation groupings and patterns, it was not possible to state that these intelligibility failures were solely or mainly attributable to intonation, as rhythmic and accentual deviations were prime. However, a number of observations about the intonation of Nigerian English are of interest, based on performance in Tests IVA and IVB. Placement of the nucleus in sentences presented considerable difficulties to the majority of speakers. Intelligibility failures were frequent, largely because of the overwhelming tendency on the part of the speakers to place the nucleus on the final element in items 7-21, irrespective of the contrasts being made. Attitude and intonation, however, were

very much better handled with the exception of complete and incomplete list of choices (items 26 and 27) and question tags (items 32 and 33). Inspite of the fact that many of the patterns employed by the speakers differed considerably from those of RP, the listeners managed, for nearly two-thirds of the time, to interpret correctly the attitudes the speakers wished to convey.

CHAPTER 12

The Causes of Intelligibility Failure: Segmental Failures

12.1 Introduction

In this chapter a summary is made of the segmental failures - vowels, diphthongs and consonants - leading to intelligibility failure in the Connected Speech tests. The findings from Test III (Phonemes) are also considered, and agreements and discrepancies indicated where appropriate.

12.2 Mispronunciation of vowels

Tables 12.3 and 12.4 show all the vowel errors, for Yoruba and Hausa speakers respectively, that led to intelligibility failure in connected speech. Contrary to expectations, a number of vowels commonly held to be major problems for Nigerian speakers, e.g. /i:, I/ and /u:, ʊ/, did not appear to be problems as far as intelligibility in connected speech is concerned. The major areas of difficulty which lead to intelligibility failure occur mainly with central and open back vowels. A summary of the principal RP vowels which led to intelligibility failure (figures indicate the number of listener failures) are as follows:

Table 12.1 Summary of principal vowel errors in connected speech

Yoruba Speakers		Hausa Speakers	
1. /ɜ:/	114	1. /ɜ:/	49
2. /ʌ/	85	2. /ɑ:/	38
3. /ɔ:/	60	3. /æ/	33
4. /æ/	16	4. /ɒ/	33
5. /ɑ:/	15	5. /ʌ/	25
6. /i:/	14	6. /ɔ:/	18

It will be seen that correct pronunciation of /ɜ:/ constitutes the major vowel phoneme problem for both Yoruba and Hausa speakers; that /ʌ/ is the second most difficult vowel for Yoruba and the fifth most difficult for Hausa speakers; and that /ɑ:/ is the second most difficult for

Hausa and the fifth most difficult for Yoruba speakers. Other vowel problems shared by both groups of speakers are /ɔ:/ and /æ/.

Another point of interest lies in the fact that although there were less intelligibility failures involving vowels with Hausa speakers than there were with Yoruba speakers, the distribution of the failures is different. With Yoruba speakers three major vowel problems are indicated - /ɜ:/, /ʌ/ and /ɔ:/; with Hausa speakers no one vowel problem is as serious as any of the three major Yoruba problems, but the difficulties are spread out over /ɜ:/, /ɑ:/, /æ/, /ɒ/, /ʌ/ and /ɔ:/.

The scores in Test III (Phonemes) - set out in full in Appendix III - show a large amount of agreement with the findings made in connected speech. The principal errors (as shown by listeners' scores) were, in descending order, as follows:

Table 12.2 Summary of principal vowel errors in Test III (Phonemes)

Vowel Contrast	Yoruba Errors	Hausa Errors	Total Errors
1, /ʌ,ɜ:/	86	50	136
2. /ɔ:,ɒ/	87	44	131
3. /ɒ,ɔ:/	61	53	114
4. /ɜ:,ɒ/	91	21	112
5. /ʊ,u:/	58	49	107
6. /e,æ/	48	54	102
7. /ʌ,ɒ/	83	12	95
8. /i:, I/	62	32	94

These results show that the pronunciation of back and central vowels was again the major cause of difficulty, in particular /ʌ/, /ɔ:/, /ɒ/ and /ɜ:/. Discrepancies between the two tests were revealed by the large number of failures in the vowel contrasts /ʊ,u:/, /e,æ/ and /i:,I/, which were not indicated by the analysis of intelligibility failures in connected speech. This discrepancy can probably be explained by the fact that in connected speech the context generally provides the clue to meaning, whereas in the isolated sentences of Test III little contextual help is given to the listener,

Table 12.3 Vowel errors leading to intelligibility failure in connected speech:

Yoruba speakers

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Total
/i:/										[i] 6		[i] 8	14
/I/						[i] 3							3
/e/					[ĭ] 4								4
/æ/						[a] 5	[ɛ] 3	[a] 2	[a] 6				16
/ʌ/	[ɔ] 6		[ɔ] 19 [o] 7	[ɔ] 2	[ɔ] 5		[ɔ] 11	[ɔ] 6	[ɔ] 4	[ɔ] 22		[ɔ] 3	85
/ɑ:/	[a] 3							[ə] 6		[a] 6			15
/D/													0
/ɔ:/	[ɔ] 11		[ɔ] 7 [o] 6					[ɔ] 4	[ɔ] 16			[ɔ] 16	60
/ʊ/						[u] 2							2
/u:/													0
/3:/	[a] 9 [ɔ] 6	[a] 10	[a] 10 [o] 4		[a] 4 [ɔ] 2	[ɔ] 14	[ɔ] 10 [e] 7 [ɛ] 3		[a] 9	[a] 3	[a] 15 [ɔ] 5	[ɔ] 3	114
/ə/													0
	35	10	53	2	15	24	34	18	35	37	20	30	313

Table 12.4 Vowel errors leading to intelligibility failure in connected speech: Hausa speakers

	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	Total
/i:/		[i]3								[I]3			6
/I/			[ə]3	[i:]3								[i]2	8
/e/		[ɛə]6											6
/æ/		[ɛ]6					[ɛ]10	[ɛ]4			[ɛ]5 [ə]2	[a]6	33
/ʌ/					[ə]16						[ə]9		25
/ɑ:/	[ə]3	[a]4					[a]7	[ə]6 [a]4	[a]2	[a]7	[ɔ]3 [a]2		38
/ɒ/	[ə]10 [o]4	[ɛ]2		[o]6	[a]2	[o]2 [ə]3	[ə]4						33
/ɔ:/		[ou]6		[ɔ] 4				[ɔ]3	[ə]5				18
/ʊ/											[u]3		3
/u:/													0
/ɜ:/	[a]5		[a]4				[a]12	[a]9	[ə]15		[ə]4		49
/ə/			[I]4										4
	22	27	11	13	18	5	33	26	22	10	28	8	223

with the result that inaccurate pronunciation is more likely to lead to intelligibility failure.

The Nigerian speakers' realisations of RP vowels are now examined from the point of view of intelligibility. The statements that follow are made mainly on an analysis of performance in connected speech, unless otherwise stated.

12.2.1 /i:/

This vowel presents few problems for Nigerian speakers, as it is relatively close to vowel phonemes occurring in both Yoruba and Hausa. For Yoruba speakers C[i̩] or C[i̩ˑ] and for Hausa speakers C[i̩] were the usual realisations.

There were a few instances, however, when speakers reduced the length of the vowel, although keeping the cardinal vowel quality, which resulted in intelligibility failure. They are:

meal ['mil] (Y10)
see ['si] (Y12)
reached ['ritʃt] (H2)

One instance of intelligibility failure was noted through /i:/ becoming [I], coupled with palatalisation:

people ['pjIpəl] (H10)

12.2.2 /I/

Although this vowel was constantly mispronounced, especially by Yoruba speakers, surprisingly few intelligibility failures resulted, mainly because the context provided the meaning. Yoruba speakers, who have no equivalent in their mother tongue, confused this vowel with /i:/, pronouncing it as C[i̩ˑ] or C[i̩]. Hausa speakers, who have a similar vowel in their mother tongue, nevertheless often pronounced it as C[i̩ˑ], as well as producing an accurate approximation to /I/.

In the very few cases of intelligibility failure noted, /I/ becomes [i] or [i:] and, in one case, [e].

forty ['fɔti] (Y6)

him ['hi:m] (H4)
since ['səns] (H3)

In Test III (Phonemes), however, the lack of distinction made between /i:/ and /I/ led, as shown in Table 12.2, to a comparatively large number of listener failures - eighth in importance, 94 errors - the contextual clues being fewer.

12.2.3 /e/

This vowel presents few problems as far as intelligibility is concerned. With both Yoruba and Hausa speakers the vowel is pronounced with a quality closer to C[ɛ] or C[ɛ̝] than to C[e]. With Yoruba speakers it is often nasalised.

Intelligibility failure occurred when a Yoruba speaker pronounced /e/ as [ĩ] and a Hausa speaker as [ɛə] :

sense	['sĩns]	(Y5)
unrest	[an'rɛəst]	(H2)

In Test III, confusion between /e/ and /æ / led to a high rate of listener failure, sixth in importance, 102 errors, again because of few contextual clues.

12.2.4 /æ /

This vowel constitutes a more serious intelligibility problem, especially for Hausa speakers. Yoruba speakers tend to confuse this vowel with [a], pronouncing it as C[ä]. Hausa speakers generally confuse the sound with [ɛ] , pronouncing it as C[ɛ̈], sometimes accompanied by palatalisation. Intelligibility failures noted were as follows:

banked	['baŋkt]	(Y6)
manner	['mana]	(Y8)
sat for	['safɔ]	(Y9)
had	['hjɛd]	(H2)
having	['hɛvI]	(H7)
graduate	['grɛdjʊɛt]	(H8)
character	['kɛrɛktə]	(H8)

There were three other instances when mispronunciation of /æ / led to intelligibility failure, which however did not fit into the pattern described above. They were:

/æ/ >	[ɛ]	January	['djɛnuari] (Y7) (The only instance in the case of a Yoruba speaker)
/æ/ >	[ə]	family	['fəmli] (H11)
/æ/ >	[a]	fans	['fanz] (H12) (The only instance in the case of a Hausa speaker)

In Test III, as stated in 12.2.3 above, confusion between /e/ and /æ/ was a conspicuous feature.

12.2.5 /ʌ/

This vowel presents serious problems, particularly for Yoruba speakers, for whom it constituted the second highest cause of intelligibility failure. Almost invariably /ʌ/ becomes [ɔ], realised as C [ɔ] or C[ɔ̈] . For Hausa speakers this vowel presents much less difficulty, but four failures in intelligibility occurred when the vowel was centralised to [ə]. Intelligibility failures noted were as follows:

Yoruba speakers >	[ɔ]	fundamentally	['fɔnda'mẽntali]	(Y1)
		clubs	['klɔbz]	(Y3)
		compulsory	[kɔm'pɔlsri]	(Y3)
		struck	['strɔk]	(Y4)
		us	['ɔz]	(Y5)
		government	['gɔvmən]	(Y7)
		run (back)	['rɔm]	(Y7)
		love	['lɔf]	(Y8)
		enough	[i'nɔv]	(Y9)
		number	['nɔmba]	(Y10)
		nothing	['nɔ'ṭin]	(Y10)
		up	[ɔ]	(Y12)

With one Yoruba speaker an instance occurred when /ʌ/ became [o] , leading to intelligibility failure :

	much	['moʃ]	(Y3)

Hausa speakers had little difficulty with this phoneme:

Hausa speakers	> [ə]	study	['stədI]	(H5)
		money	['məni]	(H5)
		love	['lə?]	(H11)
		sons	['sənz]	(H11)

Test III scores corroborated these findings. Confusion between

/ʌ/ and /ɒ/ was seventh in order of importance, with 95 errors, 83 of which were made by Yoruba speakers.

12.2.6 /ɑ:/

This vowel presents relatively few intelligibility problems for Yoruba speakers, although for Hausa speakers it causes greater difficulty. With both groups of speakers /ɑ:/ is shortened and its quality approximates to C[ä]. Examples noted were as follows:

started	['sta'ted]	(Y1)
hardship	['ha'ʃip]	(Y8)
farmer	['fama]	(Y10)
part	['pat]	(H1)
regard	[rI'gad]	(H2)
master	['masə]	(H7)
can't	['kan]	(H8)
part	['pat]	(H9)
farm	['fam]	(H10)
are	[a]	(H11)

In two instances Hausa speakers centralised /ɑ:/ > [ə], leading to intelligibility failure. They were:

start	['stət]	(H8)
classmate	['kləsmeit]	(H11)

12.2.7 /ɒ/

This vowel presents few difficulties for Yoruba speakers and no cases of intelligibility failure were noted. With Hausa speakers there is some fluctuation in pronunciation, /ɒ/ becoming [ə], [o], [a] or [ɛ]. The pronunciation of Yoruba speakers of this vowel varied from C[ɔ̣] to C[ɔ̣̈]; with Hausa speakers the commonest pronunciation was C[ɔ̈]. Examples noted were:

Hausa speakers	> [ə]	historical	[hI'stərkl]	(H1)
		want	['wənt]	(H6)
		lot	['lət]	(H7)
	> [o]	modern	['modən]	(H1 and H4)
		because	[bI'koz]	(H6)
	> [a]	wants	['wanz]	(H5)
	> [ɛ]	provocative	[pro'vɛkItIv]	(H2)

12.2.8 /ɔ:/

For Yoruba speakers this vowel presents considerable pronunciation difficulties and was the third largest single cause of intelligibility failure in the vowel category. In nearly every case vowel length is not maintained and /ɔ:/ becomes [ɔ], pronounced generally as C[ɔ̈]. For Hausa speakers this vowel is less of a problem although, as with /ɒ/, there is some fluctuation in pronunciation, /ɔ:/ becoming [ɔ] , [ɵ] and diphthongised to [ou]. The normal pronunciation is C[ɔ̣] or C[ɔ̣̈]. Examples noted were:

Yoruba speakers	> [ɔ]	form	['fɔm]	(Y1)
		warned	['wɔn]	(Y1)
		enforces	[en'fɔsis]	(Y3)
		taught	['tɔt]	(Y8)
		call	['kɔl]	(Y9)
		talked	['tɔgd]	(Y9)
		hall	['hɔl], ['hɔ]	(Y12)
		taught	['tɔt]	(Y12)

In one instance intelligibility failure resulted in /ɔ:/ > [o].

		laws	['los]	(Y3)

Hausa speaker variations, leading to intelligibility failure, were as follows:

>	[ɔ]	born	['bɔn]	(H4)
		inform	[In'fɔm]	(H8)
>	[ɵ]	thought	['θɵt]	(H5)
>	[ou]	talking	['touki ŋ]	(H2)

The difficulties of this vowel and confusion with /ɒ/ were also closely corroborated by Test III results. Confusion between this pair ranked second and third in order of importance, with 131 and 114 errors respectively.

12.2.9 /ʊ/

Although both Yoruba and Hausa speakers pronounce this vowel with the quality of C[ʉ̈]or C[ʉ̣̈], there were only

two cases of intelligibility failure due to this. Cases noted were:

books	['buks]	(Y6)
would (like)	['wud]	(H11)

In Test III inability to distinguish between /ʊ/ and /u:/ led to a high number of listener failures. Table 12.2 shows this as fifth in order of importance, with 107 errors.

12.2.10 /u:/

This vowel caused not a single instance of intelligibility failure. Pronunciation among Yoruba speakers was C[ü] or C[ụ̈], among Hausa speakers C[ü] or C[ü:].

12.2.11 /ɜ:/

For both Yoruba and Hausa speakers mispronunciation of this vowel was the single greatest cause of intelligibility failure. With Yoruba speakers the major variants of /ɜ:/ are [a] or [ɔ], realised as [ä] or C[ɔ]; with Hausa speakers /ɜ:/ often becomes [a], pronounced as C[ä]. Instances of intelligibility failure noted were:

Yoruba speakers	> [a]	were	['wa]	(Y1 & Y5)
		heard	['had]	(Y1)
		certain	['satn], ['satin]	(Y2)
		research	[ri'satʃ]	(Y3)
		earns	['anz]	(Y5)
		reverse	[ri'vaz]	(Y9)
		learn	['lan]	(Y10)
		her	['a], ['ha]	(Y11)
	> [ɔ]	work	['wɔk]	(Y1 & Y6)
		works	['wɔks]	(Y5)
		first	['fɔs]	(Y7)
		turn	['tɔn]	(Y11)
		walk	['wɔk]	(Y12)
	> [o]	working	['wokɪ]	(Y3)
	> [e]	heard	['hed]	(Y7)
	> [ɛ]	heard	['hɛd]	(Y7)
Hausa speakers	> [a]	service	['savɪs]	(H1)
		heard	['had]	(H3)
		were	['wa]	(H7)
		early	['alɪ]	(H7)
		her	['ha]	(H8)
	> [ə]	world	['wəld]	(H9)
		working	['wəkiŋ]	(H11)

The difficulties of this vowel were strongly corroborated by the results of Test III, especially in respect of Yoruba speakers. Table 12.2 shows confusion between /ɜ:/ and /ʌ/ to be the single greatest source of intelligibility failure, with 136 errors; while confusion between /ɜ:/ and /ɒ/ ranked fourth in importance, with 112 errors.

12.2.12 /ə/

This vowel is rarely used and almost invariably a full spelling pronunciation is employed. However, this does not lead to intelligibility failure and it is therefore doubtful whether the amount of time and effort spent on teaching weak forms is at all justified. Only one instance of intelligibility failure was noted, when a Hausa speaker (H3) pronounced /ɪ/ as /I/, resulting in 'given' being pronounced ['givIn].

An interesting counter-tendency was, however, noted: the use of /ə/ in stressed syllables in place of other vowel sounds. These substitutions, made only by Hausa speakers, sometimes led to intelligibility failure, especially when substituted for /ʌ/, and /ɜ:/, e.g.

/ʌ/ >	[ə]	study	['stədI]	(H5)
		money	['məni]	(H5)
		love	['lə?]	(H11)
		sons	['səns]	(H11)
/ɜ:/ >	[ə]	world	['wəld]	(H9)
		working	['wəkiŋ]	(H11)

Other examples of /ə/ being used as a substitute vowel in stressed syllables were:

/I/ >	[ə]	since	['səns]	(H3)
/æ/ >	[ə]	family	['fəmli]	(H11)
/ɑ:/ >	[ə]	start	['stət]	(H8)
/ɒ/ >	[ə]	lot	['lət]	(H7)
/ɔ:/ >	[ə]	thought	['θət]	(H5)

12.3 Mispronunciation of diphthongs

Tables 12.7 and 12.8 show all the diphthong errors, for Yoruba and Hausa speakers respectively, that led to intelligibility failure in connected speech. From this it will be seen that /eI/ is the only diphthong that constitutes a real barrier to the intelligibility of Nigerian English, for both

Yoruba and Hausa speakers. To a lesser extent, mispronunciation of /ɛə/ by four Yoruba speakers and /ɔI/ by two Hausa speakers also led to intelligibility failure. None of the other diphthongs presented serious intelligibility problems.

A summary of the principal RP diphthongs that led to failure (figures indicate the number of listener failures) is as follows:

Table 12.5 Summary of principal diphthong errors in connected speech

Yoruba speakers			Hausa speakers		
1.	/eI/	41	1.	/eI/	27
2.	/ɛə/	17	2.	/ɔI/	11

The scores in Test III (Phonemes) show considerable disagreement with the findings made in connected speech. The principal errors (as shown by listeners' scores) were, in descending order, as follows:

Table 12.6 Summary of principal diphthong errors in Test III (Phonemes)

	Diphthong contrast	Yoruba errors	Hausa errors	Total errors
1.	/əʊ, ɔ:/	49	76	125
2.	/Iə, ɛə/	55	23	78
3.	/eI, e/	8	5	13

This discrepancy can again probably be explained by the fact that the Phoneme Test provided little in the way of contextual clues, unlike connected speech. Also /eI/ is a diphthong of high frequency, and the fact that it occurs commonly in speech leads to more opportunities for mispronunciation and consequent intelligibility failure.

The Nigerian speakers' realisations of RP diphthongs are now examined from the point of view of intelligibility.

12.3.1 /eI/

For both Yoruba and Hausa speakers this diphthong presents considerable pronunciation difficulties and was by

Table 12.7 Diphthong errors leading to intelligibility failure in connected speech: Yoruba speakers

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Total
/eI/		[e] 8		[e] 2		[e] 9	[e] 7		[e] 6	[e] 5		[e] 4	41
/aI/													
/ɔI/													
/əʊ/										[ɔ:] 7			7
/aʊ/		[ɛ̃] 5											5
/Iə/													
/ɛə/			[ɛə] 4	[Iə] 3						[e] 3		[a] 7	17
/ʊə/													
/aIə/	[ao] 9												9
	9	13	4	5	-	9	7	-	6	15	-	11	79

Table 12.8 Diphthong errors leading to intelligibility failure in connected speech: Hausa speakers

	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	Total
/eI/	[e] 3	[e] 12	[e] 4					[e] 6				[e] 2	27
/aI/													
/ɔI/				[əi] 8					[əI] 3				11
/əʊ/								[ɔ] 2	[ɔ] 2				4
/ɑʊ/										[a] 7			7
/Iə/												[ɛə] 2	2
/ɛə/							[a] 5						5
/ʊə/													
/aiə/	[aijə] 2												2
	5	12	4	8	-	-	5	8	5	7	-	4	58

far the largest single cause of intelligibility failure in the diphthong category. In nearly all cases /eI/ was monophthongised to [e], pronounced generally as C[ę] or C[ę̈].

Instances of intelligibility failure noted were:

Yoruba speakers	shape	['ʃ ep], basic ['besIk]	(Y2)
	made	['med]	(Y4)
	break	['brek], places ['plesiz]	(Y6)
	raise	['rez], main ['men], canes ['kenz]	(Y7)
	made	['med], tales ['telz]	(Y9)
	male	['mel]	(Y10)
	play	['ple], day ['de]	(Y12)
Hausa speakers	gain	['gen]	(H1)
	changes	['t ʃ end ʒis], gave ['gev]	(H2)
	aim	['em] (H3 & H12)	
	say	['se], pay ['pe]	(H8)

As stated in 12.3, the importance of this diphthong for intelligibility was not brought out in Test III (Phonemes). In Table 12.6 it will be seen that confusion between /eI/ and /e/ led to only 13 errors.

12.3.2 /áI/

Although this diphthong was normally pronounced by Yoruba speakers as two separate elements, i.e. [a + i] with a final glide close to C[i], no cases of intelligibility failure were noted in connected speech as a result of this. Hausa speakers' realisation of this diphthong approximated closely to that of RP and, again, no cases of intelligibility failure occurred.

12.3.3 /ɔI/

This diphthong was normally pronounced by Yoruba speakers as two separate elements, C[ɔ + i̤], and by Hausa speakers as C[ɔi̤]. Intelligibility problems with this diphthong are minimal. There were, however, two instances of intelligibility failure with Hausa speakers who centralised the first element to [ə]:

> [əi]	boys	['bəis]	(H4)
	join	['dʒəin]	(H9)

12.3.4 /əʊ/

Mispronunciation of this diphthong led to very few intelligibility failures in connected speech, even though the realisations were very different from those of RP. For Yoruba speakers the commonest pronunciations were C [o] or C [o̩]; for Hausa speakers C[ö ü̩].

The only instances of failure noted were:

≻ [ɔ:]	only	['ɔ:]	(Y10)
≻ [ɔ]	own	['ɔn]	(H8 and H9)

In Test III (Phonemes), however, the distinction /əʊ, ɔ:/ led to a large number of listener failures - 125 in all (Yoruba 49 and Hausa 76). Again the greater number of contextual clues in connected speech doubtless compensates for the common mispronunciation of /ɔʊ/.

12.3.5 /aʊ/

Intelligibility failures involving this diphthong were minimal. Both Yoruba and Hausa speakers normally fronted the first element, resulting in a pronunciation [aʊ]. Only two instances of failure were noted:

≻ [ɛ̃]	sound	['sɛ̃nd]	(Y2)
≻ [a]	grounds	['granz]	(H10)

12.3.6 /Iə/

The pronunciation of /Iə/ presented negligible difficulties as far as intelligibility in connected speech was concerned. There were no instances of intelligibility failure among Yoruba speakers, and only one instance was noted among Hausa speakers, the diphthong being pronounced as [ɛə]:

mere	['mɛə]	(H12)

In Test III (Phonemes), however, inability to distinguish /Iə, ɛə/ led to 78 cases of intelligibility failure (Yoruba 55, Hausa 23).

12.3.7 /ɛə/

This diphthong presented some difficulty for Yoruba speakers, with four different realisations noted - [ɛ̨a], [iə],

[ɛ̯e] and [a]. For Hausa speakers, there was very little difficulty, only one instance of intelligibility failure being noted with a realisation of [a].

> [ɛa]	where	['wɛa]	(Y3)
> [iə]	parents	['piərəns]	(Y4)
> [e]	area	['eria]	(Y10)
> [a]	scarcely	['skasli]	(Y12)
> [a]	parent	['parənt]	(H7)

12.3.8 /ʊə/

No instances of intelligibility failure due to mispronunciation of this diphthong were noted.

12.3.9 /aIə/

This triphthong caused minor pronunciation problems in connected speech with one Yoruba and one Hausa speaker, the realisations being [ao] and [aijə] respectively:

> [ao]	pioneering	[pao'nɛ̃rĩ̯]	(Y1)
> [aijə]	acquire	[ə'kwaijə]	(H1)

In Test III (Phonemes) distinction between the diphthong /aI/ and triphthong /aIə/ proved difficult , resulting in 98 intelligibility failures (Yoruba 54 and Hausa 44).

12.4 Mispronunciation of consonants

The number of intelligibility failures due to mispronunciation of consonants was considerably less than the number due to vowel mispronunciations - 242 to 536 respectively. Errors caused by mispronunciation of consonants have been categorised according to position in the word: initial, medial and final and are shown in detail in Tables 12.12.1-12.14.2. A summary of errors by category is as follows·

Table 12.9 Number of consonant errors in connected speech

Initial	Medial	Final	
74 (Yoruba)	24 (Yoruba)	58 (Yoruba)	
23 (Hausa)	41 (Hausa)	22 (Hausa)	
97	65	80	Total

From this it will be seen that Yoruba speakers make more errors with consonants in initial and final positions, whereas Hausa speakers tend to make more errors with consonants in medial positions. The main consonant phonemes that cause difficulty are:

Table 12.10 Summary of principal consonant errors in connected speech

Y. = Yoruba H. = Hausa

	Initial	Medial	Final
1.	/θ/ > [t] (Y.)	/z/ > [s] (Y.)	syllabic /l/ > [ũ] (Y.)
2.	/θ/ > [s] (H.)	/f/ > [p] (H.)	/ŋ/ > [n] (Y.)
			/d/ > [t] (Y.)
			/dʒ/ > [tʃ] (Y.)

However, one of the characteristics of consonant errors, as opposed to vowel errors, is that they are not evenly distributed among a number of speakers. Tables 12.12, 12.13 and 12.14 reveal that only /θ/ > [t] in initial position and syllabic /l/ > [ũ] in final position, both made by Yoruba speakers, are errors shared by several speakers. The rest of the errors noted were made by one or, at most, two speakers in each of the two languages groups and cannot therefore be considered representative of the group as a whole. Indeed it seems reasonable to state that /θ/ and syllabic /l/ are the only two consonants that present serious problems from the point of view of intelligibility in connected speech.

The scores in Test III (Phonemes) revealed, on the other hand, that incorrect devoicing of consonants in final position led to the greatest number of intelligibility failures. The principal errors (as shown by listeners' scores) were as follows:

Table 12.11 Summary of principal consonant errors in Test III (Phonemes)

Consonant contrast	Yoruba errors	Hausa errors	Total errors
1. Final /z,s/	85	64	149
2. Final /g,k/	54	70	124
3. Final /b,p/	46	56	102
4. Medial /ð,d/	46	32	78
5. Final /ŋ,n/	44	29	73
6. Medial /dʒ,ʒ/	29	43	72

Table 12.12.1 Initial consonants leading to intelligibility failure in connected speech: Yoruba Speakers

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Total
p							[β] 5						5
b													
t													
d													
k													
g													
tʃ													
dʒ													
f													
v													
θ	[t] 8		[t] 14			[t] 6			[t̪] 4	[t] 6	[t] 4	[s] 9	51
ð	[d] 3	[d] 4											7
s	[s̪] 7												7
z													
ʃ											[s̪] 4		4
ʒ													
h													
m													
n													
ŋ													
l													
r													
j													
w													
	18	4	14			6	5		4	6	8	9	74

Table 12.12.2 Initial consonants leading to intelligibility failure in connected speech: Hausa Speakers

	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	Total
p b t d k g tʃ dʒ f v θ ð s z ʃ ʒ h m n ŋ l r j w	[p] 3					[hw] 4				[f] 2	[s] 14		2 3 14
	3					4				2	14		23

Table 12.13.1 Medial consonants leading to intelligibility failure in connected speech: Yoruba speakers

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Total
p b t d k g tʃ dʒ f v θ ð s z ʃ ʒ h m n ŋ l r j w	[s] 3		[s] 9						[θ] 7		[v] 5		5 7 9 3
	3		9						7		5		24

Table 12.13.2 Medial consonants leading to intelligibility failure in connected speech: Hausa speakers

	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	Total
p								[f] 2			[f] 4		6
b	[β] 10												10
t													
d													
k													
g													
tʃ											[ʒ] 4		4
dʒ													
f							[pʰ] 7					[p] 5	12
v												[v] 6	6
θ													
ð													
s					[z] 3								3
z													
ʃ													
ʒ													
h													
m													
n													
ŋ													
l													
r													
j													
w													
	10				3		7	2			8	11	41

Table 12.14.1 Final consonants leading to intelligibility failure in connected speech: Yoruba speakers

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Total
p													
b													
t													
d			[t] 4					[t] 5					9
k													
g													
tʃ												[ʃ] 2	2
dʒ					[t] 5 [ʒ] 3		[tʃ] 2						10
f									[v] 8				8
v													
θ													
ð													
s										[s] 3		[s] 2	5
z													
ʃ													
ʒ													
h													
m													
n			[n] 7				[n] 4						11
ŋ													
l	[ũ] 2		[ũ] 6				[ũ] 2				[ũ] 3		13
r													
j													
w													
	2		17		8		6		2	5	8	3	3	4	58

Table 12.14.2 Final consonants leading to intelligibility failure in connected speech:

Hausa speakers

	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	Total
p b t d k g tʃ dʒ f v θ ð s z ʃ ʒ h m n ŋ l r j w		[tʰ] 4		[I] 9			[s] 7			[n] 2			4 7 2 9
		4		9			7			2			22

It will be seen that there is little correlation between the consonantal difficulties revealed in connected speech and Test III (Phonemes). Certainly, in connected speech devoicing of final consonants was a common phenomenon, but there were comparatively few cases of intelligibility failure arising out of this. It can be concluded, therefore, that while Phoneme tests give an indication of the consonant problems encountered by speakers, there is no necessary correspondence between these and general intelligibility in contextualised speech.

An analysis of the intelligibility failures caused by mispronunciation of consonants in connected speech now follows:

12.4.1 Plosives

This group of consonants caused only minor instances of intelligibility failure. Cases noted were:

Initial /p/ > [f]	prefer	['frI'fə:r]	(H10)
Medial /p/ > [f]	developing	[dI'vɛlofIn]	(H8)
	proper	['prɔfə]	(H11)
Initial /b/ > [β]	bed	['βed]	(Y7)
Medial /b/ > [β]	labour	['leβə]	(H1)
Final /t/ > [t^h]	that wife	[ðæt^h'waif]	(H2)
Final /d/ > [t]	depend	[di'pent]	(Y3)
	roamed	['romt]	(Y8)

There were no cases of intelligibility failure noted due to mispronunciation of /k/ or /g/.

As has already been shown in Table 12.11, Test III (Phonemes) results revealed that devoicing of final plosives (especially /g/ and /b/) led to a large number of intelligibility failures, 124 and 102 respectively. In connected speech, however, these errors appear to have little effect on intelligibility, mainly due to other contextual clues which were lacking in Test III.

12.4.2 Affricates

This group of consonants led to a certain amount of difficulty with the intelligibility of Yoruba speakers especially.

The tendency was to devoice final /dʒ/ into [tʃ], or to omit the stop so that /dʒ/ becomes [ʒ] and /tʃ/becomes[ʃ]. One Hausa speaker's realisation of /dʒ/ as [ʒ] in medial position also led to intelligibility failure. Errors noted were:

Medial /dʒ/	> [ʒ]	religion	[rə'lIʒ In]	(H11)
Final /tʃ/	> [ʃ]	catch	['ka ʃ]	(Y12)
Final /dʒ/	> [tʃ]	age	['etʃ]	(Y5)
		stage	['stetʃ]	(Y7)
Final /dʒ/	> [ʒ]	marriage	['mari ʒ]	(Y5)

In Test III (Phonemes), on the other hand, confusion of medial /dʒ,ʒ/ led to a comparatively large number of intelligibility failures - 72 errors - especially among Hausa speakers.

12.4.3 Fricatives

Taken as a whole, this group of consonants presented the most serious difficulties in regard to intelligibility, and, in particular, mispronunciation of initial /θ/ by seven out of the twelve Yoruba speakers. Errors noted were:

Initial /f/	> [p]	first	['pəs]	(H1)
Medial /f/	> [v]	prefers	['pri'vas]	(Y11)
Medial /f/	> [p]	forefinger	['fɔ:'piŋgə]	(H7)
Medial /f/	> [pʰ]	comfort	['kʌmpʰə]	(H12)
Final /f/	> [v]	life	['laiv]	(Y9)
Medial /v/	> [ʋ]	available	[a'ʋelᵊbu]	(H12)
Initial /θ/	> [t]	thumb	['tɔmp]	(Y1)
		thought	['tɔt]	(Y3)
		things	['tĩns]	(Y3)
		think	['tiŋk]	(Y6 & Y10)
		through	['tru]	(Y11)
Initial /θ/	> [t̪]	things	['t̪iŋz]	(Y9)
Initial /θ/	> [s̪]	things	['s̪ĩns]	(Y12)
		things	[siŋz]	(H11)
Initial /ð/	> [d]	those	['dos]	(Y1)
		the	[dI]	(Y2)
Initial /s/	> [s̪]	senior	['s̪ĩnjə]	(Y1)
Medial /s/	> [θ]	necessary	['n̪ɛθəsri]	(Y9)
Medial /s/	> [z]	recent	['ri:zənt]	(H5)
Medial /z/	> [s]	reside	[ri'said]	(Y3)
Final /z/	> [s]	things	['thĩs]	(Y10)
		hours	['auᵊs]	(Y12)
		boys	['bɔis]	(Y7)

Initial /ʃ/ >	[s̪]	she	[ˈs̪i]	(Y11)
Medial /ʃ/ >	[s̪]	rushed	[ˈrɔs̪t]	(Y1)
Initial /h/ >	[hw]	who	[ˈhwʊ]	(H6)

No cases of intelligibility failure were noted due to mispronunciation of [ʒ]. In Test III (Phonemes), as Table 12.11 shows, devoicing of final /z/ led to the largest number of failures among consonants, 149 in all, but this error does not appear to be a serious problem as far as connected speech is concerned.

12.4.4 Nasals

No instances of intelligibility failure were noted as a result of mispronunciation of /m/ or /n/. A limited number of failures resulted from the realisation of /ŋ/ in final position as [n], as follows:

Final /ŋ/ >	[n]	feeding	[ˈfi:din]	(Y3)
		taking	[ˈtekin]	(Y6)
		building	[ˈbIldIn]	(H10)

Test III (Phonemes) also showed that confusion between final /ŋ, n/ was a source of intelligibility failure.

12.4.5 Laterals

Four Yoruba speakers mispronounced syllabic /l/ as [ũ], thereby leading to intelligibility failure; one Hausa speaker's realisation of it as [I] led to the same result. In all other instances the 'clear' /l/ is used, but this did not lead to intelligibility failure, even when, in RP, the 'dark' /l/ would have been used.

Syllabic /l/ >	[ũ]	hospital	[ˈɔspitũ]	(Y1)
		little	[ˈlitũ]	(Y3)
		people	[ˈpipũ]	(Y6)
		suitable	[ˈsjutiˈbũ]	(Y11)
>	[I]	middle	[ˈmIdI]	(H4)

12.4.6 Frictionless Continuants.

Although the realisation of /r/ was in nearly all cases an alveolar tap [ɾ] no intelligibility failures were noted as a result of this.

12.4.7 Semi-vowels

No cases of mispronunciation of /j/ and /w/ were noted leading to intelligibility failure.

12.5 Summary

In this chapter the major segmental errors leading to intelligibility failure in connected speech have been examined.

A number of vowels commonly held to be major problems for Nigerian speakers, in particular /i:, I/ and /u:, ʊ/, did not appear to be problems as far as intelligibility in connected speech is concerned. Although the speakers consistently failed to make the contrasts between these pairs of vowels, this did not lead to intelligibility failure, mainly because the context provided the necessary clues. The principal areas of difficulty lay in the central and open back vowels. Correct pronunciation of /ɜ:/ constitutes the major vowel phoneme problem for both Yoruba and Hausa speakers. Both groups of speakers share problems with /ʌ/, /ɑ:/, /ɔ:/ and /æ/. Although schwa /ə/ is rarely used and is almost invariably given a full spelling pronunciation, this does not lead to intelligibility failure.

Of the diphthongs, /eI/ is the only one that presents a real barrier to intelligibility for both Yoruba and Hausa speakers.

The number of intelligibility failures due to mispronunciation of consonants was considerably less than the number due to vowel errors. /θ/ and syllabic /l/ are the only two consonants that present serious problems from the point of view of intelligibility in connected speech.

The errors revealed in Test III (Phonemes) show a large amount of agreement with the findings made in connected speech as far as vowels are concerned; whereas with diphthongs and consonants there was far less agreement. It may be concluded that while Phoneme tests give an indication of the phonetic problems encountered by speakers, there is no necessary correspondence between these and general intelligibility in contextualised speech.

CHAPTER 13

The Causes of Intelligibility Failure: Phonotactic and Lexical/Syntactic Failures

13.1 Introduction

In this chapter the last two broad groupings of intelligibility failure in connected speech are considered together: phonotactic failures and lexical/syntactic failures. Phonotactic failures comprise incorrect elision of phonemes, mispronunciation of consonant clusters, metathesis and incorrect assimilation; the second grouping is concerned with incorrect, unusual and unfamiliar lexis and incorrect and unusual syntax.

13.2 Incorrect elision of phonemes

With the Yoruba speakers there were nearly three times as many intelligibility failures due to incorrect elision of phonemes as there were with Hausa speakers - 204 to 81 failures respectively. An analysis of the type and place of elision errors reveals the following:

Table 13.1 Summary of elision errors

	Initial Phoneme	Medial	Final	Word Boundary	Total
Yoruba	24	37	78	65	204
Hausa	6	19	21	35	81
	30	56	99	100	285

Thus taking the two groups of speakers together, elision of phonemes at word boundaries and in final position within the word constitute the greatest difficulty, followed by elision within the word of phonemes in medial and initial position. An analysis now follows.

13.2.1 Elision of initial phonemes

Errors arising out of incorrect elisions in this position concerned two phonemes only, the vowel /I/ in unstressed pre-nuclear position and the consonant /h/. Examples noted were:

Elision of /I/	impressed	[m'prɛ̃z]	(Y1)
	encounter	[ŋ 'kauntə]	(Y4)
	immediately	['mi:djɛtlI]	(H9)
Elision of /h/	has	['az]	(Y3)
	has	['as]	(Y11)
	have	['av]	(Y10)
	hate	['et]	(Y9)

13.2.2 Elision of phonemes in medial position

Errors occurred mainly in words with three or more syllables. The most commonly elided phoneme was /I/ in either unstressed pre- or post-nuclear position or on one occasion when bearing the full stress. Examples were:

Unstressed /I/	conscientiously	[kɔn'tʃɛn'tʃəs'li]	(Y9)
	principal	['prins'pal]	(Y7)
	growing	['groun]	(H9)
	participating	[pa'tIspetiŋ]	(H1)
Stressed /I/	Certificate	['satf'kat]	(Y11)

Other vowels and diphthongs elided were unstressed /ə/ and /u:/, and /əʊ/ in both stressed and unstressed positions:

Unstressed /ə/	Federation	[fɛd'reʃn]	(Y4)
Unstressed /u:/	supervision	['spaviʃn]	(Y3)
Unstressed /əʊ/	co-operation	[kɔpə'reʃn]	(H9)
Stressed /əʊ/	social	['sʃal]	(Y3)

Finally there were three instances of consonants being elided, /j/, /n/ and /dʒ/.

Elision of /j/ (+ vowel change)		pupil	['pipũ]	(Y10)
"	/n/	traditional	[tra'diʃal]	(H11)
	/dʒ/	arrangements	[ə 'renmənts]	(H11)

13.2.3 Elision of final phonemes

Incorrect elision of phonemes in final position was a particularly common cause of intelligibility failure with Yoruba speakers. The nasal consonants, and especially /n/, were the major source of difficulty, the nasal consonant frequently being replaced by a final nasalised vowel or diphthong.

Elision of final /n/	seen	['sĩ]	(Y1)
	fine	['faĩ]	(Y3)
	done	['dã]	(Y5)
	modern	[mɔ'dã]	(Y8)
	been	['bi]	(Y10)
Elision of final /nz/	means	['mĩ]	(Y2)
Elision of final /m/	aim	['ɛ̃]	(Y1)
	time	['taĩ]	(Y8)
	time	['tai]	(H4)
Elision of final /ŋ/	interesting	['ɪ̃trɛstɪ̃]	(Y1)
	dining	['dainĩ]	(Y12)

Apart from incorrect elision of nasals no definite pattern emerged with other groups of consonants. There were a limited number of failures involving plosives, affricates, fricatives and laterals with both Yoruba and Hausa speakers, as follows:

Elision of final plosives -	/t/	got	['go]	(Y7)
	/d/	ride	['rai]	(Y4)
		had	['a]	(Y10
		he would	[i'wu]	(Y11)
	/k/	folk	['fo]	(Y11)
		seek	['si:ʔ]	(H8)
	/kt/	respect	[rə'spɛ]	(H12)
Elision of final affricates -	/tʃ/	which	['wi]	(Y2)
	/dʒ/	marriage	['mari]	(Y8)
Elision of final fricatives -	/f/	wife	['waĩ]	(Y5)
		wife	['wai]	(H2)
	/v/	of	['ɔ]	(Y11)
Elision of final laterals -	/l/	real	['ria]	(Y10)

No instances of intelligibility failure through elision of the final vowel were noted.

13.2.4 Elision of phonemes at word boundaries

One of the commonest difficulties with both Yoruba and Hausa speakers lay in the incorrect realisation of /nt/ in the negative form of auxiliary verbs, particularly in disyllables before a following consonant or vowel. Examples noted were:

wouldn't refuse	['wũnan]	(Y5)
didn't like	['dInt]	(H1)
	['din]	(H11)
didn't begin	['dn]	(H4)
doesn't usually	['dou]	(Y12)
isn't as much	[iz'int]	(Y6)
isn't a part	['izin]	(Y6)
wasn't a secondary school	['wɔzən]	(H4)

Other instances leading to intelligibility failure were caused by incorrect elision of /l/ and /w/ at word boundaries, as follows:

/l/	she'll not be able	['ʃi nət]	(H8)
/w/	it will	['itũ]	(Y8)
	we were	['wia]	(Y3)

Three further failures were caused by incorrect elision before or after /ð/ in combination with a semi-vowel:

Elision of final /n/ and final /ə/	in the(university)	[iðə]	(Y6)
Elision of final /ə/	the ways	['ðwes]	(H2)
	the work	['ðwə̀k]	(H9)

13.3 Mispronunciation of consonant clusters

With the Yoruba speakers there were more than double the number of intelligibility failures due to mispronunciation of consonant clusters than was the case with Hausa speakers - 136 to 60 failures respectively. An analysis of the type and place of consonant cluster errors is as follows:

Table 13.2 Summary of consonant cluster errors

	Initial	Medial	Final	Total
Yoruba	27	23	86	136
Hausa	11	22	27	60
	38	45	113	196

From this table it will be seen that mispronunciation of consonant clusters in final position accounts for the greatest number of intelligibility failures, particularly with Yoruba speakers.

13.3.1 Mispronunciation of initial consonant clusters

Relatively few cases of intelligibility failure were noted as a result of incorrect pronunciation of consonant clusters in initial position. In most cases, the error consisted in reducing the sequence CC to C by omitting the second consonant in the sequence, or else by substituting an intrusive vowel in its place. Four initial consonants only were involved: the plosives /p/ and /g/, and the fricatives /θ/ and /s/. Examples noted were as follows:-

CC -

/pr/ > [p]	primary	['paimɘri]	(Y7 & Y10)
/θr/ > [θIr]	three	['θIri]	(Y12)
> [tIr]	three	['tIri]	(Y1)
/st/ > [s]	standard	['sandad]	(Y2)
	students	['su'denz]	(Y9)
	standard	['sændəd]	(H12)
/gr/ > [gl]	great	['glet]	(H9)

13.3.2 Mispronunciation of medial consonant clusters

The number of intelligibility failures occurring medially at syllable boundaries were, again, relatively few. No clear pattern emerges in the types of error noted. The classification that follows is divided into two sections C + C and C + C + C:

- C + C -

/t/ + /r/ > [tIr]	expatriates	[ɛks'patIri:ts]	(H10)
/d/ + /r/ > [d]	secondary	['sɛkɔndI]	(Y3)
/k/ + /tʃ/ > [tʃ]	lectures	['lɛtʃəs]	(Y6)
> [ʃ]	lectures	['lɛʃrə]	(Y6)
/g/ + /z/ > [z]	exam	[ɛ'zam]	(Y12)
/s/ + /tʃ/ > [sj]	christians	['krIsjIənz]	(H7)
/n/ + /ʃ/ > [ʃ]	mention	['mɛʃən]	(H4)

- C + C + C -

/s/ + /t/ + /r/ > [sr]	history	['hisri]	(Y6)
/n/ + /s/ + /t/ > [st]	instance	['Istɘn]	(H12)

13.3.3 Mispronunciation of final consonant clusters

Mispronunciation of final consonant clusters, especially by Yoruba speakers, led to the greatest number of

listener failures. Of the 21 instances listed below, 57% involve the pronunciation of plural nouns or third person singular verbs, i.e. the combination C(C) + /s/ or /z/. In most cases the consonant or consonants preceding the final sibilant were omitted. Mispronunciations involving a nasal plus a final consonant also led to a number of failures. Failures noted were as follows:

- CC

/ts/	>	[s]	notes	['nos]	(Y3)
			scouts	['skaus]	(H1)
			sports	['spos]	(H9 & H10)
	>	[z]	hates	['hez]	(Y10)
/dz/	>	[s]	needs	['nis]	(Y12)
	>	[z]	attitudes	['ati'tu:z]	(Y10)
/ks/	>	[s]	books	['bus]	(Y12)
/ft	>	[vt]	left	['levt]	(Y3)
/st/	>	[s]	almost	['ɔl'mos]	(Y11)
			rest	['rɛs]	(Y12)
/md/	>	[m]	acclaimed	[a'klem]	(Y9)
/mz/	>	[z]	rooms	['rũ:z]	(Y6)
/nt/	>	[t]	meant	[met]	(Y9):
				['mẽt]	(Y12)
/nd/	>	[n]	mind	['main]	(H5)
			ground	['graun]	(H7)
	>	[ũ]	happened	['hapũ]	(Y10)
/ndʒ/	>	[dʒ]	ranging	['redʒiŋ]	(Y9)
/nz/	>	[s]	happens	['hjɛpəs]	(H7)
	>	[z]	happens	['hapũz]	(Y5)
/lz/	>	[z]	rules	['ru:z]	(Y3)

- CCC

/nts/	>	[z]	parents	['perɛ̃z]	(Y5)

13.4 Metathesis

Metathesis, leading to intelligibility failure, was an uncommon occurrence. As there were only six instances noted, (five of them with Yoruba speakers), it is not possible to draw any firm conclusions as to tendencies. However, it is worth noting that three of the cases involved difficulties with consonant clusters and that transposition of /r/ occurred three times. The examples were as follows:

christian	[ˈkərʃn]	(Y2)
often	[ˈɔfənt]	(Y9)
threepence	[ˈθərpəns]	(H7)
to realise	[tuərˈlaiz]	(Y6)
especially	[eʒˈpəli]	(Y6)
predecessors	[priˈsidesəs]	(Y10)

13.5 Incorrect assimilation

Incorrect assimilation was not a serious cause of intelligibility failure and mainly involved Hausa speakers. The cases of assimilation noted were, with one exception, all regressive and occurred at word boundaries. Alveolar fricatives and stops were particularly susceptible to incorrect assimilation before /ð/. Cases noted were:

13.5.1 Variations of place

/z/ > [ð] before /ð/

realise the (value)	[rɛaˈlaið ðI]	(H7)
choose the (wife)	[ˈtʃuːð ð.I]	(H8)

/tʃ/ > [ð] before /ð/

approach the (girl)	[əˈprouð ðI]	(H8)

Included in this section for convenience, although not strictly a case of assimilation, is the phenomenon

/z/ > [ð] before /b/

was brought	[wəð ˈbrot]	(H11)

13.5.2 Fortis/lenis variations

Regressive assimilation of voice led to intelligibility failure in the case of one Yoruba speaker

/f/ > [v] before /w/	if one	[iv]	(Y12)

13.5.3 Coalescence of /t/ with /j/

Coalescence of /t/ + /j/ > /tʃ/ is common in RP speech, but in the case of one Hausa speaker the accompaniment of strong aspiration led to intelligibility failure:

/t/ + /j/ > [tʃʰ]	not used to	[nɔˈtʃʰust tə]	(H7)

13.6 Incorrect, unusual or unfamiliar lexis

Lexical problems were not a serious cause of intelligibility failure - representing 4.1% and 6.8% of all failures in the case of Yoruba and Hausa speakers respectively. They are categorised as follows:

13.6.1 Incorrect lexis

One of the major types of error lay in the incorrect choice of verb, e.g.

I met the contrary (= found the opposite) (Y3)
he tells his choice (= he names his choice of wife) (Y5)
I heard (= felt) a tapping on my body (Y7)
to keep for my house (= to play goalkeeper) (H1)
you are diverting (= deserting?) our religion (H7)

Other errors arose out of various causes such as incorrect idiom, wrong use of adjectives or adverbs and mis-pronunciation of abbreviations, e.g.

some strokes of the bell (Y7)
cinemas (= films) (H3)
in very referred (= elevated) positions (Y9)
other relative (= related) children (H11)
such high (= advanced) courses (H12)
a bit (= quite) normal (H9)
etc. (mispronounced as ['i:ti:si:]) (H9)

13.6.2 Unusual lexis

In these instances the lexical item was not actually incorrect, but was nevertheless unusual and would probably not be used by a native speaker, e.g.

academic aspect (Y3)
it doesn't sound well to me (Y6)
staying around with people around (Y6)
I passed out (= left school) in 1964 (Y8)
I was given a double promotion (= went up two classes) (Y8)
when the exam is around (Y12)
their due freedom (H11)

13.6.3 Unfamiliar lexis

In the majority of cases listeners failed to understand terminology or idioms commonly used in Nigeria, e.g.

transferred (= posted to a new job) a lot	(Y1)
senior brothers	(Y10)
tight (= close) friends)	(H2)
compound (= garden, grounds)	(H10)
district head	(H10)
Muslim (pronounced as ['mʊslIm])	(H11)

Two other, non-Nigerian, terms were also apparently unfamiliar to some listeners

tenniquoit	(Y1)
fagging system	(H1)

13.7 Incorrect or unusual syntax

Again, syntactic problems were not a serious cause of intelligibility failure - representing 2.5% and 5.4% of all failures in the case of Yoruba and Hausa speakers respectively. They are categorised as follows:

13.7.1 Incorrect syntax

A number of errors were caused by incorrect verb forms (particularly in the case of the third person singular), e.g.

I had strong aspiration for going	(Y1)
I restrained from footballing (= refrained from playing football)	(Y1)
She only need to present	(Y11)
this tradition is occurring very greatly	(H2)
for to select their own wives	(H5)
I will fall in for her (= fall in love with her)	(H5)
they shout on us	(H7)
my wife have.....	(H8)
boys were being playing about	(H10)

Other errors were the result of mishandling of determiners e.g.

doing such job	(H1)
on so so and so so books (= in such and such a book)	(H3)
much non-related people	(H11)

Finally there was a miscellaneous group of errors:

will no more exist (= no longer)	(Y2)
the teacher does the less	(Y3)
as well read the books (=read the books as well)	(Y11)
anything can be done tangible about it	(H9)

13.7.2 Unusual syntax

This small group of errors consisted of forms which were not strictly ungrammatical, but which would probably not be used by native speakers:

a goal to be registered by an opponent	(Y1)
an hour writing (= writing for an hour)	(Y6)
we are three in a room	(Y6)
the benefit of it (= the benefit to be derived from it)	(H1)

13.8 Summary

In this chapter the phonotactic and lexical/syntactic errors that led to intelligibiliy failure have been examined.

Incorrect elision of phonemes, particularly with Yoruba speakers, was a serious cause of intelligibility failure. Elision of phonemes at word boundaries and in final position within the word constituted the greatest difficulty, followed by elision within the word of phonemes in medial and initial position.

Mispronunciation of consonant clusters in final position led to a considerable number of intelligibility failures, especially with Yoruba speakers. More than half of these errors involved the mispronunciation of plural nouns or third person singular verbs.

Metathesis was not a serious cause of error. Neither was incorrect assimilation. The cases of assimilation noted were, with one exception, all regressive and occurred at word boundaries.

Lexical and syntactic errors were a minor cause of intelligibility failure. Lexical errors mainly resulted from the incorrect choice of verb or idiom; syntactic errors were caused principally by incorrect verb forms, particularly in the case of the third person singular.

CHAPTER 14

Observations on Testing and Implications for Teaching

14.1 Observations on testing

The aim of this investigation has been firstly to measure the intelligibility of the speech of educated Nigerians to educated British listeners, and secondly to analyse the most important causes of intelligibility failure. The first aim is also shared by examining bodies who wish to test achievement in oral English. The second aim is of interest to teachers of English, who wish to help their pupils speak in a manner that is intelligible throughout the English-speaking world. We will look first at the implications this study has for those testing achievement in oral English, and secondly at the implications for those who teach English.

The study has shown that performance in connected speech can be measured in three ways - by scoring correct units of the speakers' texts after dictation (see Chapters 8 and 9), by analysis of the actual phonetic errors leading to intelligibility failure (see Chapter 10), and by listeners' impressionistic judgements of the speakers' intelligibility (see Chapter 9). The method of scoring based on dictated units was validated by the RP speaker's high mean score with British listeners. This method of scoring was regarded in this study as the principal measure of a speaker's intelligibility in connected speech. The scores ranged from 92.7% down to 29.9%, with a mean score of 64.4%. The distribution of scores is fairly symmetrical about the mean and it would appear that the sample of 24 Nigerian speakers selected is satisfactorily representative of the population of Nigerian English-speakers of similar background. This scoring method had the very high reliability of .98 averaged over 10 listeners, and was also satisfactory, with a reliability of .82, with a single listener. It would appear therefore to provide an economical as well as reliable way of testing the intelligibility of connected speech. The main difficulty of using it for examinations is the need for careful and, in the case

of poor speakers, repeated playbacks of the recording in order to determine what the speaker actually said and to measure the deviations between the speaker's text and the listener's version of it.

The second scoring method - the count of errors which led to a breakdown in intelligibility - produced an almost identical ranking order to that obtained by the first scoring method. It suffers from the same practical disadvantage of being not only extremely time-consuming but also of requiring a trained phonetician to produce the test result. The third method, the impressionistic judgement of ten listeners averaged out, had a high intercorrelation of .95 with the first method. It can also be done quickly and does not call for the use of professional phoneticians.

In measuring and making statements about the intelligibility of Nigerian English the main criterion has been performance in connected speech. The tests involving reading passages, the pronunciation of phonemes, the ability to produce accurate stress patterns in the word and the sentence and the ability to express attitude through varying intonation contours have all been regarded as subsidiary. These tests are a useful ancillary to tests of connected speech, but suffer from certain inherent drawbacks. In effect they beg the question about the speakers' likely weaknesses. The tester himself selects, in advance, the errors he expects to find and the results tend to confirm his original expectations. In addition, tests of this nature - for example phoneme tests - take little account of the frequency of occurrence of the phonemes of English. This is not to say, however, that these subsidiary tests have no value: they are useful diagnostic pointers to pronunciation difficulties. They have been found at times to corroborate the conclusions reached about the causes of intelligibility failure in connected speech; and at other times they have been found to conflict with these conclusions. This in itself is useful, for it reveals, for example, that although speakers may perform badly in certain areas (e.g. in the /i:,I/ contrast or in distinguishing between final voiced and voiceless consonants) this does not necessarily lead to much intelligibility failure in connected speech. In other

words, it seems reasonable to state that where the results in both the subsidiary tests and the tests of connected speech correspond, these particular errors leading to intelligibility failure are of crucial importance for both testing and teaching programmes; where the results conflict it may be assumed that such errors are of less importance - at least as far as intelligibility in connected speech is concerned - although they should be borne in mind in diagnostic testing and remedial teaching programmes.

It should also be noted that the reliabilities for these subsidiary tests were not as high as for the connected speech test, particularly with a single listener. However, when averaged over ten listeners all the tests are adequately reliable. The intercorrelations between scores in the subsidiary tests and the main test of connected speech have been analysed in Chapter 9. The main interest for testers of English is the relatively high intercorrelation of .65 between scores in Test II (Reading Passage) and Test I (Connected Speech) and also that the mean score for all three Reading tests is not significantly different from the mean score obtained for the test of Connected Speech - 65.5% and 64.4% respectively. This suggests that examining bodies might be able to overcome some of the problems involved in examining oral English by administering a carefully selected reading passage to candidates. It raises far less problems than the assessment of spontaneous connected speech and appears to give a reliable assessment of the candidate's performance in spoken English.

14.2 Implications for teaching

It is hoped that the findings of this investigation will assist teachers and text book writers to establish priorities for the teaching of spoken English in Nigeria. It has been shown that not all 'common errors' in Nigerian spoken English are crucial to intelligibility in connected speech. Certain areas of spoken English are of more importance than others, particularly stress. Indeed, it has been shown that although the speakers scored highly on the Phoneme tests, with a mean score of 76.4%, there is no significant correlation between this score and performance in connected

speech. Similarly there is no significant correlation between ability in connected speech and ability to express attitude through intonation. Stress, however, is significantly correlated both to connected speech and, as the partial correlation analyses show, to all the other elements under consideration. Stress was found to be the major component of all aspects of intelligibility.

The main factors leading to intelligibility failure, which teachers should bear in mind, are as follows:

(a) Rhythmic/stress errors

Errors in this grouping - involving incorrect rhythm, incorrect word stress, elision of syllables and incorrect phrasing - constitute the greatest barrier to the intelligibility of Nigerian speakers of English, in particular Yoruba speakers. Any teaching programme of spoken English should therefore pay considerable attention to these factors, particularly sentence rhythm and word stress. There was a tendency among Yoruba speakers to stress too many syllables in the utterance, while Hausa speakers tended to produce utterances that contained too few stressed syllables. Both these tendencies led to many instances of intelligibility failure with listeners. It seems essential that spoken English courses should give priority to teaching the characteristic rhythmic patterns of English. Incorrect word stress, particularly with Yoruba speakers, is again a serious cause of intelligibility failure. The two commonest deviations from the norm were movement of the accent away from the first syllable onto succeeding syllables in the word and the substitution of two primary accents in words normally bearing only one accent, or one primary and one secondary accent. The fact that most of the Nigerian speakers did not use reduced forms of vowels in unstressed syllables was not in itself a serious cause of intelligibility failure. The implication here for a teaching programme is that priority should be given to accurate word stress patterns and that less importance should be attached to attempting to make

students produce the /ə,I/ forms in unstressed syllables. Indeed, some varieties of English, e.g. Northern English and South African English, make far less use of reduced forms in unstressed syllables than RP, the vowel being given more or less its full value. It is the correct accentual pattern of the word that is important for intelligibility rather than the quality of unstressed vowels in the word. Another important difficulty for Nigerian speakers is the accurate placing of the nucleus in sentences. For example, in one of the sentences in Test IVA - No, John motored to London - where John, motored and London were required to be stressed in turn according to the contrast being made, the overwhelming tendency on the part of the speakers was to place the nucleus on the final element, irrespective of the contrast required. Although this aspect of spoken English led to very few failures in connected speech and is not as important as accurate rhythm and word stress, a teaching programme should certainly place some emphasis on the teaching of contrastive stress in spoken English.

(b) Segmental errors

The major vowel problems leading to intelligibility failure in connected speech occurred mainly with central and open back vowels. Rather than attempting to teach an accurate pronunciation of all the vowel phonemes of English, it would seem wiser in a teaching programme to concentrate mainly on those vowels crucial to intelligibility. Correct pronunciation of /ɜ:/ is the major vowel phoneme problem for both Yoruba and Hausa speakers. Two other serious problems for Yoruba speakers are correct pronunciation of /ʌ/ and /ɔ:/. With Hausa speakers no one vowel problem, apart from /ɜ:/, is as serious as the major Yoruba problems, but the difficulties are spread out over /ɑ:/, /æ/, /ɒ/, /ʌ/ and /ɔ:/. It is of interest to note here once again that although the Nigerian speakers consistently failed to make the contrasts in quality and quantity between pairs of adjacent vowels, particularly /i:,I/ and /u:,ʊ/, this led to very few intelligibility failures in connected speech, mainly because the context provided the meaning. In addition,

schwa /ə/ was rarely used, and almost invariably a full spelling pronunciation was employed instead. Again, this did not lead to intelligibility failure. It is suggested therefore that in a teaching programme less time might be spent on teaching distinctions between the adjacent pairs of vowels mentioned above and on the use of schwa /ə/, and that more time and effort should be devoted to the more important vowel problems discussed at the beginning of this paragraph.

Of the RP diphthongs only /eI/ presents a real barrier to intelligibility for both Yoruba and Hausa speakers and it is suggested that teaching efforts should be directed towards eradicating the strong tendency towards reducing it to the pure vowel [e].

Mispronunciation of consonants led to far fewer intelligibility failures than vowel errors. The two most common pronunciation errors that led to intelligibility failure were initial /θ/ > [t] and syllabic /l/ > [ũ], both made by Yoruba speakers. Devoicing of final consonants was a common phenomenon among both Yoruba and Hausa speakers but led to few intelligibility failures in connected speech. In the interests of accuracy a teaching programme should obviously pay attention to this problem, but it would seem that the greatest emphasis should be placed on the correct pronunciation of /θ/ and syllabic /l/. It is also of interest to recall that few Nigerian speakers produce the RP frictionless continuant /r/ and the dark /l/. This does not lead to intelligibility failure and it is suggested that the usual Nigerian realisations [ɾ] and the habitual use of the clear /l/ are acceptable substitutes.

(c) Phonotactic errors .

In this group of errors incorrect elision of phonemes, particularly at word boundaries and in final position within the word, is the problem needing most attention in a teaching programme, particularly with Yoruba speakers. Incorrect elision at word boundaries was mainly caused by the incorrect realisation of /nt/ in the negative form of auxiliary verbs, whereas incorrect elision of final consonants mainly concerned nasals, which were often replaced by a nasalised vowel or diphthong.

Mispronunciation of consonant clusters, especially in final position, also led to many intelligibility failures, again mainly with Yoruba speakers. More than half these failures were caused by mispronunciation of plural nouns or third person singular verbs. In most cases the consonant or consonants preceding the final sibilant were omitted. It seems important that a teaching programme should concentrate on this problem.

Metathesis and incorrect assimilation are minor problems as far as intelligibility is concerned.

(d) Lexical/syntactic errors

These errors, as might be expected, were not a serious cause of intelligibility failure with speakers of this educational background. Lexical errors were mainly the result of the incorrect choice of verb or idiom. Syntactic errors were principally caused by incorrect verb forms, especially in the case of the third person singular where final /s/ or /z/ were omitted.

14.3 Conclusion

An investigation of this nature often raises as many problems as it sets out to solve. For example, further areas for research suggest themselves: the intelligibility of Nigerian speakers to other Nigerians; to different groups of Africans, e.g. Kenyans and Zambians; to other second and foreign language speakers of English, e.g. Indians and Scandinavians. Furthermore, it has touched upon interesting speculations which merit further research, as they have important implications for examination bodies and educational planners. For instance, what is the relationship between intelligibility and performance in written and oral English examinations? Is there any relationship between intelligibility and the age of beginning and using English in the primary school? Is the quality of English teaching at secondary school of more importance for intelligibility than the amount of exposure to English in the primary school? If English and, above all, spoken English is regarded as important, the answers to these questions should be known.

For there seems little doubt that the two types of

Nigerian English examined in this investigation are here to stay and that English in Nigeria is now set on a path from which there is no turning back. As Nigerians participate more and more in the affairs of the rest of the English-speaking world the need for effective communication will continually increase. Although Nigerian English will always have a certain 'foreign' ring about it to the native English speaker this need not in itself be a barrier to intelligibility. But, as this research has shown, there are a number of features in present Nigerian spoken English which do hinder communication with the outside world. By pinpointing these features and by suggesting that testing and teaching programmes should take account of them it is hoped that this investigation will make a contribution towards more efficient communication. If it does, the effort will have been very much worthwhile.

Bibliography

ABERCROMBIE, D. (1956). Problems and Principles in Language Study. London: Longmans.

ABRAHAM, R.C. (1959). The Language of the Hausa People. London: University of London Press.

AFOLAYAN, A. (1968). The Linguistic Problems of Yoruba Learners and Users of English. University of London Ph.D. Thesis.

BAMGBOSE, A. (1966). A Grammar of Yoruba. London: Cambridge University Press.

- . (1969). "Yoruba", in Twelve Nigerian Languages, ed. E. Dunstan. London: Longmans, 163-72.

BANSAL, R. K. (1966). The Intelligibility of Indian English. University of London Ph.D. Thesis.

- . (1969). The Intelligibility of Indian English. Monograph No. 4, Hyderabad: Central Institute of English.

BERRY, J. (1964). "Pidgins and creoles in Africa", in Symposium on Multilingualism. London: CCTA/CSA, 219-25.

BLACK, J. W. (1962). "Predicting the intelligibility of words", Proceedings of the Fourth International Congress of Phonetic Sciences. The Hague: Mouton, 347-54.

- , SINGH, S., TOSI, O., TAKEFUTA, Y. and JANCOSEK, E. (1965). "Speech and aural comprehension of foreign students", Journal of Speech and Hearing Research, 8, 1, 43-8.

BRIÈRE, E. J. (1968). A Psychological Study of Linguistic Interference. The Hague: Mouton.

BROWN, K. (1968). "Intelligibility", in Language Testing Symposium, ed. A. Davies. London: Oxford University Press, 180-91.

CARNOCHAN, J. (1964). "Pitch, tone and intonation in Yoruba", in In Honour of Daniel Jones, ed. D. Abercrombie et al. London: Longmans, 397-406.

CARROLL, B. J. (1963). Speech Intelligibility. University of Edinburgh Diploma Thesis.

CATFORD, J.C. (1950). "Intelligibility", English Language Teaching, 5, 1, 7-15.

CHERRY, C. (1968). On Human Communication. Massachusetts: M.I.T. Press.

COLEMAN, J. (1958). Nigeria: Background to Nationalism. Berkeley and Los Angeles: University of California Press.

COMMONWEALTH CONFERENCE ON THE TEACHING OF ENGLISH AS A SECOND LANGUAGE. (1961). Report of the Commonwealth Conference. Entebbe: Government Printer.

CRYSTAL, D. (1969). Prosodic Systems and Intonation in English. London: Cambridge University Press.

DAVIES, A. (Ed.) (1968). "Report on oral English testing in West Africa', in Language Testing Symposium, ed. A. Davies. London: Oxford University Press, 151-79.

DENNY, N. (1963). "Languages and education in Africa", in Language in Africa, ed. J. Spencer. London: Cambridge University Press, 40-52.

EGAN, J. P. (1945). "Articulation testing methods", The Laryngoscope, 58, 9, 955-991.

ELANANI, M. I. (1968). An Assessment of the Intelligibility of Jordanian English to Educated Speakers of British English. University of Leeds M. Phil.Thesis.

FORD FOUNDATION. (1966). English Language Teaching in Nigeria. Lagos.

FRY, D. B. (1947). Articulation Tests. University of London Ph.D. Thesis.

- . (1955). "The experimental study of speech", in Studies in Communication, ed. A. J. Ayer et al. London: Secker and Warburg, 147-67.

- . (1956). "Perception and recognition in speech", in For Roman Jakobson, ed. M. Halle et al. The Hague: Mouton, 169-73.

- . (1958). "Experiments in the perception of stress", Language and Speech, 1, 2, 126-52.

GIMSON, A. C. (1962). An Introduction to the Pronunciation of English, London: Edward Arnold.

GRAY, G. W. and Wise, C. M. (1959). The Bases of Speech. New York: Harper and Row.

GREENBERG, J. H. (1964). "The study of language contact in Africa", in Symposium on Multilingualism. London: CCTA/CSA, 167-75.

- . (1966). Languages of Africa. The Hague: Mouton.

GUTHRIE, M. (1964). "Multilingualism and cultural factors", in Symposium on Multilingualism. London: CCTA/CSA, 107-8.

HALLIDAY, M. A. K., McIntosh, A. and Strevens, P. D. (1964). The Linguistic Sciences and Language Teaching. London: Longmans.

HICKERSON, H., TURNER, G. D. and HICKERSON, N. P. (1952). "Testing procedures for estimating transfer of information among Iroquois dialects and languages", International Journal of American Linguistics, 18, 1, 1-8.

HOCKETT, C. F. (1958). A Course in Modern Linguistics. New York: Macmillan.

HOFFMAN, C. and SCHACHTER, P. (1969). "Hausa" in Twelve Nigerian Languages, ed. E. Dunstan. London: Longmans, 73-84.

KIRK-GREENE, A. H. M. (1967). "The linguistic statistics of Northern Nigeria: a tentative presentation", African Language Review, 6, 75-101.

LADO, R. (1961). Language Testing: The Construction and Use of Language Tests. London: Longmans.

- . (1964). "Memory span as a factor in language learning", International Review of Applied Linguistics, 3, 2, 123-9.

LANE, H. (1963). "Foreign accent and speech distortion", Journal of the Acoustical Society of America, 35, 4, 451-3.

LANHAM, L. W. (1963). "Teaching English pronunciation in Southern Africa", Language Learning, 13, 3 and 4, 153-70.

LAVER, J. (1968). "Assimilation in educated Nigerian English", English Language Teaching, 22, 2, 156-60.

LIEBERMAN, P. (1963). "Some effects of semantic and grammatical context on the production and perception of speech", Language and Speech, 6, 3, 172-87.

MALMBERG, B. (1963). Structural Linguistics and Human Communication. Berlin, Göttingen and Heidelberg: Springer-Verla

MILLER, G. A. (1951). Language and Communication. New York: McGraw-Hill.

- , HEISE, G. A. and LICHTEN, W. (1951). "The intelligibility of speech as a function of the context of the test materials", Journal of Experimental Psychology, 41, 5, 329-35.

- & NICELY, P. E. (1955). "An analysis of perceptual confusions among some English consonants", Journal of the Acoustical Society of America, 27, 2, 338-52.
NUTTALL, C. E. (1961). Phonological Interference of Hausa with English: A Study in English as a Second Language. University of Manchester M.A. Thesis.
- . (1965). Some Likely Areas of Difficulty for Hausa Students of English. Occasional Paper No. 5 , Department of Languages. Zaria: Ahmadu Bello University.
PARSONS, F. W. (1964). "Some observations on the contact between Hausa and English", in Symposium on Multilingualism. London: CCTA/CSA, 197-203.
PERREN, G. E. (1963). Linguistic Problems of Oversea Students in Britain. ETIC Occasional Paper No. 5. London: The British Council.
PETERSON, G. E. & BARNEY, H. L. (1952). "Control methods used in the study of the vowels", Journal of the Acoustical Society of America, 24, 1, 175-84.
PICKETT, J. M. & POLLACK, I. (1963). "Intelligibility of excerpts from fluent speech: effects of rate of utterand and duration of excerpt", Language and Speech, 6, 3, 151-64.
PIERCE, J. E. (1952). "Dialect distance testing in Algonquion", International Journal of American Linguistics, 18, 4, 208-18.
PRATOR, C. H. (1964). "Education problems involved in the teaching of English as a second language", in Symposium on Multilingualism. London: CCTA/CSA, 65-81.
RICE, F. A. (Ed.) (1961). Second Language Learning as a Factor in National Development in Asia, Africa and Latin America. Washington: Center for Applied Linguistics.
RICHARDS, D. L. & SWAFFIELD, J. (1959). "Assessment of speech communication links", Proceedings of the Institution of Electrical Engineers, 106, Part B, 26, 77-89.
RICHARDSON, I. (1964). "Linguistic change in Africa with special reference to the Bemba-speaking area of Northern Rhodesia", in Symposium on Multilingualism. London: CCTA/CSA, 189-96.
ROWLANDS, E. C. (1963). "Yoruba and English: a problem of co-existence", African Language Studies, 4, 208-14.
SCHAFER, M. (1967). A Phonological Study of Some Aspects of the English Pronunciation of a Group of Yoruba Primary School Children. University of London M.Phil. Thesis.
SIERTSEMA, B. (1959). A Test in Phonetics. The Hague: Martinus Nijhoff.
SPENCER, J. (Ed.) (1963). Language in Africa. London: Cambridge University Press.
STREVENS, P. (1965). Papers in Language and Language Teaching. London: Oxford University Press.
ULDALL, E. T. (1960). "Attitudinal meanings conveyed by intonation contours, Language and Speech, 3, 4, 223-34.
- . (1962). "Ambiguity: question or statement?" Proceedings of the Fourth International Congress of Phonetic Sciences. The Hague: Mouton, 779-83.
UNIVERSITY OF LONDON (1961, 1962). General Certificate of Education Examination: Subject Reports on the Work of Candidates Overseas. London.

VOEGELIN, C. F. & HARRIS, Z. S. (1951). "Methods for determining intelligibility among dialects of natural languages", Proceedings of the American Philosophical Society, 95, 3, 322-9.

WARD, I. C. (1952). An Introduction to the Yoruba Language. Cambridge: Heffer.

WEINREICH, U. (1953). Languages in Contact. New York: Publications of the Linguistic Circle of New York.

WEST AFRICAN EXAMINATIONS COUNCIL. (1970). School Certificate and General Certificate of Education: Regulations and Syllabuses for the Examinations. Lagos.

APPENDIX I

Texts of Test I - Connected Speech

Y1

Before I started secondary school I had strong aspiration for going/ because I had seen so many primary school classmates of mine/ who were already in the secondary school before I started./ Those people have really impressed me./ Fundamentally I had no aim -/ I mean I had no idea of doing a particular work/ before I entered the secondary school./ Having entered the secondary school I found it interesting./ From stories I have heard from people who have/ gone before me.....who had gone before me rather...../ I was told that senior boys used to maltreat junior ones,/ but fortunately for me, when I started it wasn't like that./ I was lucky that I was one of the pioneering students/ of the school where I started./ Being that we had no seniors we find things easy./ There was no punishment from any senior boy,/ except the few prefects we had among us/ and, you know, those could not inflict any serious punishment upon us,/ since we were classmates./

In the lower forms I was a.....I was a good footballer./ I used to play for the school First XI up to form three,/ but in form three there was a case/ which restrained me from playing./ When we were playing one day I fell seriously/ in an attempt to defend a goal to be registered by an opponent./ During that time I was about to knock my head against the post./ Had that happened no doubt I would have died./ Of course I had my thumb turned right/..... turned round on that very day,/ so I had to be rushed to the hospital./ I restrained from footballing from that moment/ because my mother, being an illiterate and somebody very primitive,/ had warned me not to be playing football,/ being that I was the only son of her/ and she has seen so many people with broken legs from the field./ So I thought perhaps her advice might have got something./ I thought it might be prophetic somehow./ Therefore I heeded her advice and I stopped footballing,/ but I was getting on very well with table-tennis,/ tenniquoit and running and so on and so forth./

Y2

When the parents of a boy.....I mean of a boy.... finds out that/ the boy is old enough to have a wife,/ they will look around in the compound or somewhere in the village/ to find an ideal wife for the boy./ It is not the boy to tell his parents that he wants a wife,/ but it's the parent who will know the time that the boy is old enough to/ have a wife and therefore they will look around for an ideal wife for the boy./

Personally, I don't look for a specific physical appearance./ It is love that matters./ I do agree that with some people who/ claim that they don't like certain shape or something like that/ but I personally feel that physical appearance/ is not something that one should look for,/ because if, let's say, there is an accident/ and what you are looking for physically is missing,/ then the love will no more exist/ so I personally feel that love is really what matters./

As a Christian I have to marry a Christian./ This is what my religion demands/ and therefore I will look for a Christian that I love./ There are various ways where....I mean...../ through which you can get in contact with Christian girls./ We have Christian gathering/ where you can move with girls and see how...../ what type of girls certain girls are and therefore you can/ associate yourself with them and then try to win their love./

Well, surely there are advantages and disadvantages of having a wife who works./ If your wife is working it means that income will come from/ both your wife and yourself/ and therefore you have to maintain a sound standard of living./ That is one of the basic advantage./ On the contrary, there are disadvantages./ If your wife is working it means that/ the wife will not be able to care properly for the children,/ which means that there will be some development which will not be/ so good to the bringing up of the child./

Y3

Before I came here my thought about university life was that/ it would look much like the life in secondary school,/ where games.....where everything was virtually made compulsory for the boys/ and where boys depend mostly on the teachers,/ where in classwork in secondary school/ we used to.....we rely on teachers to do everything for us,/ make research and write the notes on the board for us to copy down,/ without any much work for us to do./ But when I got here I could see that.....I met the contrary/ we were left to do much of the work/ and the teacher was....the teacher does the less./

Well, the life here is quite fine./ Its academic aspect is teaching us to.....is teaching us a lot,/ that much will depend on us in the future life./ We're being trained for the future life in that/ we are being made to be responsible parents and responsible personalities./

The social life in the university is/ one of the things that makes the life very interesting,/ for it isn't possible for one to continue working without any enjoyment/ and this is what the social aspect of university life has provided./ There are clubs created where one could reside/ there are many other things like recreation where televisions

are provided,/ table tennis and many other clubs like football clubs/ and volley ball clubs and dance clubs/ where one could use.....spend his leisure time./

At present what I could make out in the university life is that/ there seems to be too much freedom for the boys./ Many boys could just travel out of the campus without any permission from the authority./ That does a lot of damage to his academic work/ and I think it will be necessary that the university authority/ enforces some laws or rules on the boys' movement and freedom,/ and it is necessary that some supervision is given to boys' academic work./

About feeding and accommodation, well, it isn't very good at present/ because rooms are too congested and there's little freedom/ and there's little.....there's not enough space for each student in his room./

Y4

Well, in the primary school what struck me most was,/ you know, the movement from home to school./ The relationship between me.....between the teachers and myself/ wasn't quite what it used to be at home/ and since this was the first time really that/ I would get away from my parents, I found it a bit difficult,/ the more so as we had a disciplinarian for a teacher,/ you know, he used to cane a lot/ and every morning I used to weep before going to school in fact./

Well, while at primary school I didn't encounter much/ by way of difficulties, except, I mean,/ simply because my parents were teaching, too, at that time,/ but one thing was that they were transferred a lot/ with the result that I couldn't stay.../....I mean, I couldn't make friends for a long time to start with,/ and then in my last year at primary school/ I had to go to a school which was about three miles from home./ I used to ride there and, you know, we would have lesson at seven/ just before school opens at eight,/ and after that we would continue at.....we would break up at two,/ then start again at four and you see the interval between two and four/ wasn't enough for me to get back home and return./

The thing that struck me most..../.....and really it was my first impression/ at secondary school was the fact that there were many Europeans there/ who were as teachers/ and this was the first time really that I was taught by Europeans/ and I didn't understand, I couldn't hear what they were saying clearly enough./ They were too fast for me/ and another thing was that, you know,/ there.....boys from different parts of the Federation were brought together/ and I had my first real opportunity to meet these students./

Well, I think I preferred the senior part of my school life because,/ you know, I couldn't make friends for long to start with in the junior part of the school/ and in fact the few I made I think I have...../ I can't remember their faces now./

Y5

Well, as for choosing a wife what normally happens is that/ in the traditional sense the father normally gives.. ...../ makes sure that his son marries,/ and then usually it is a sort of compromise/ between the father of the son and the father of the.....maybe woman./ Sometimes such a compromise takes place at the....you know, when they were...../ when they knew.....when both couples knew nothing about it,/ so that in order to keep the unity of both families together/ so that they usually make arrangements and eventually/ both boy and girl are introduced to each other/ while they are young and eventually when they get married/ in most cases they get used to each other/ and of course they have no choice./ They just have to.....and the marriage has to be done./

Well, nowadays what is happening is that/ most couples prefer what we call the Western sense of romantic love./ Usually both couples meet, secretly of course,/ because normally a father with a girl/ usually try as much as possible to prevent men from coming to see her./ So that usually both couples meet secretly outside,/ and get interested in each other/ and of course in my society many of us are becoming very educated/ so that parents normally recognise this type of love/ and he tells his choice and the parents arrange with the other parents/ and the marriage is carried out./ Of course, they wouldn't refuse the choice of their son./

Well, having a wife.....having a wife who works normally,/ the greatest advantage, I believe, is from the economic point,/ in that she earns some money/ and that of course helps to replenish the family income./ But then the greatest disadvantage is that normally where she works/ she meets some other men who who may be as equally interested as myself,/.....I mean, as interesting as myself,/ and then of course such a thing could be...../ I mean, could break a family, which is very serious./

Y6

When I was in the [HSC]/ I was made to realise that the university work/ isn't as much as the HSC work,/ so I banked on having a very nice time/ meeting people, having much time to myself,/ but when I came out here/ I found it

was a little bit different from what I was told./ Well, the work isn't too bad but it's a little bit overbearing./ It gives me a lot of time to settle down/ especially when I came first/ because going to lectures isn't a part of my life./ I just find.....I find it very boring to sit down an hour writing./ In the HSC you have about forty minutes class,/ then you have a break, come back then for another forty minutes./ But in the university, an hour, it looks difficult for me,/ but now I'm trying to fit into environment./

I am not given too much work to do/ but too much people want me to do them,/ because when a lecturer comes in - taking history for example -/ he comes in, gives a number of books...../ a number of reference books and gives his lectures./ I don't know how he would expect me to read the lectures/ and as well read the books./ When I read the books I almost find the same thing he gives in the lectures/ in the books, so I don't see the reason why I should read the books./ But as he says I should do so, well I have to./

[Ahmadu Bello University] is not what I admire very much socially./ The hostel accommodations,/ well, I don't know what the university is trying to do about it/ but at present we are three in a room/ and I don't think it is convenient for people to stay three in a room/ because it looks like, I mean, a secondary school dormitory./ Because staying around with people around you may not be able to work/ as much as you like, but our rooms I expected to be private places/ but three in a room doesn't.....it doesn't sound well to me./

Y7

My parents first sent me to school for two main reasons,/ one, to get education, and, secondly, to help raise my family./ My first impression of primary school life was that/ when I first got to primary school/ I was embarrassed by the sight of so many people/ but eventually I got used to it./ When I first got to primary school I was first afraid of the teachers/ because they used to carry canes about./ At first I used to run back to.....I used to run back home/ but my parents would drive me back./ Eventually I got used to it and I stopped running back home./

I got to Government College in 1960, January./ When I first entered the compound/ I was impressed by the beautiful buildings I saw around./ I got to the school on Friday./ On Monday by 6.15 I heard a rising bell./ I wasn't used to this so I overslept,/ so later on I heard a tapping on my body./ When I woke up I found a prefect near me./ He told me that it was time to get up./ I got up, I sat on my bed, not knowing what to do./ Then he told me that I was to go and bathe in the bathroom./ I went to the bathroom, I had my bath,/ and I came back to the room./ I dressed up and went to the dining hall./ After breakfast

I came back to my room./ I saw others packing their books, going to the school./ I did the same, packed my books and went straight to school./ When I got to school I heard some strokes of the bell./ I saw some people run towards the assembly hall./ Not knowing what to do I stood around./ Later on, a prefect came near me/ and told me I was to go the assembly hall./ Not disobeying I hurried down to the assembly hall./ After having seated myself after a few minutes/ the principal came up to the stage and he announced a hymn./ After singing we were to say the Lord's Prayer./ After the Lord's Prayer we were asked to sit down by the principal/ and he welcomed new students back to the school./

Y8

In my society [Yoruba] society, marriage come before love./ The parents of the man hoping to marry looks for the wife for that man/ and it will be an agreement between the two families,/ before such a marriage can come up/ and after the marriage then love can be made./

Due to the present educational changes/ I think it is love now that comes up before marriage,/ and it is the duty of the man hoping to marry to find out his own wife/ and introduce her to the family./ But the family up to the present moment/ will still look into the family of that girl,/ whether there are some diseases which are hereditary/ and if such could be found I think the marriage will be discouraged./

I think one of the major characteristics will be manner./ "Manner maketh a man", as people say,/ and if a woman is....has manners/ I think she will be able to keep the house very well./ She must be presentable and must have adequate education./ Adequate education, how high I will actually prefer will be nothing less than School Certificate./ I think I will set out to find out all these qulities/ in any girl I hope to marry/ and if I can find out if she possesses all these qualities/ I think she'll be the best person for me to marry./

Actually, I would try as much as possible not to give my children/ the hardship I have encountered,/ because I started school very early actually, but/ due to financial difficulties I was not allowed to get into secondary school on time./ I started my primary school in 1949, passed out finally in 1954./ I attended....I was asked to go to secondary modern school./ I attended secondary modern school for three years/ and I passed out in 1957./ I roamed about for two years and I taught for a year before I could be allowed to get into the secondary school/ and I was admitted in [Ondo] Boys' High School in 1961./ Probably because of my modern school education/ I was given a double promotion at the end of the year to class three/ and I passed the School Certificate in 1964./ So I run the course.....I ran the course for four years instead of five./

Y9

In point of fact I have no idea whatsoever/ about what university life would be/ but I have met with some undergraduates before/ who have sort of told us so many tales about what university life would be,/ ranging from the relationship between lecturers and students/ and then the sort of academic work they're meant to do./ Well, I think as we often read in papers/ undergraduates are often acclaimed to be the fathers of the country later in their life,/ so they are sort of placed in a very referred positions/ and I think through their....all the.....what.....their academic achievement,/ well, they are made the leaders of the world./ Well, when I came into the.....well, before I came into the university/ I thought people just go into the lecture room/ to listen to the lecturers who will sort of provide them with enough materials,/ as we had in secondary school./ Or, well, sometimes they would dictate note/ but when I came into the university/ I found that students are just made to do the majority of the work on their own/ that lecturers just provide them with some necessary materials or the guidance,/ after which students would go into the library/ make necessary research to implement the materials they were given./

Now, concerning the relationship between lecturers and students/ we have often been told, well, it was a tale so I will call it,/ that no matter how a student or how brilliant a student is/ well, if he doesn't behave that the lecturers will hate him/ and so, by so doing, he couldn't make any headway in the university./ But when I came into the university/ I sort ot talked with so many lecturers including our professor of [Zoo] / who gave me the reverse of the impression/ I have been made to carry into the university./ Well, I thought he's one of the best men I have ever spoken to/ because he encourage us so much and sort of made everything easier to me./ I have.....well, we've never sat for the Zoo exam but, well,/ according to how he enunciated most of the things to us/ I think anybody who has been working conscientiously throughout the course/ could always make an headway in Zoo and some other subjects like that./

Y10

My parents sent me to school because by the time I was young/ they had been realising the importance of education/ and moreover I happened to be one of the first male boys he had/ and my predecessors had been going to school/ and moreover, too, I think when I was young/ I was too fond of my father/ that I would like to run after him to wherever he goes,/ so he hates this idea because he doesn't want me to become a farmer like himself./ So when I was not even up to the age of going to school/ he had been forcing me to go with my senior brothers,/ even though I was realising nothing at school./

My first impression about primary school was not all all good/ because I could see the teachers how they flog these old pupils/ who are ? my elders who were in school./ This made me to be running away from school sometimes./ What I like in school then was the actual meal and recreation,/ boys playing football, running about shouting./ There was not anything of interest on the academic or...../ just any good impression about academic./ I only like to play, shout and eat,/ so until I come to the age of about six or seven/ I come to realise that I have to learn something/ and it was then I started reading in a real sense./

The difficulties I encountered at primary schools/ were, number one, after my brother has left school/ I found it too difficult to go to school alone/ without anybody reminding me that I should have to follow him./ And even when I become used to going to school myself/ I found out that I had to apply some logic into some things I do/ which are not the usual way young boys have developed in my area,/ so whatever I was doing then I have to listen./ This was very difficult for me to acquire/ but as time goes on I found out I was....I was...../ I become very used to it/ and my attitudes in English language were not all that pleasant,/ because I feel it's something forced on me to speak./

Y11

In my society if you like to marry/ before this time you will probably have come across a lady in the street./ It is then you'll make up your mind/ if you have considered her suitable enough for you to marry./ Then you will prepare to be going to her house./ The first time you go to her house/ she'll probably not welcome you in the manner you expect./ The only thing you need to is to be persistent/ and consistent in your going to her house./ Then you will start noticing changes in her attitude./ In the first time it might be difficult/ to put across to her your views totally./ If she's going to be the type of wife you will like/ it is through her behaviour and attitude towards you/ that you are going to decide./

Before in my area, in my area in particular, if you like to marry/ most of the arrangements are made for you by the parents/ of the prospective husband of the lady,/ but at present things have taken a different turn/ because you actually go out to look for your wife these days/ so that most of the arrangements are concluded by you,/ and the lady needs to tell her parents/ that this is the sort of the husband she would like to marry/ or this is the..... this is.....she only need to present to her parents the husband she has chosen./ But in the past it used to be the tradition/ that if a man has got a daughter/ she would....he would probably like the daughter to be married to a friend

of him,/ so he would approach the man to come and look for the girl,/ if she's the type he prefers/ instead of the man actually going to.....instead of the man actually going to look for the girl./ So this is one of the changes that has actually taken place/ compared with the past system./

Personally, it is almost difficult to get an ideal wife/ because there are so many characteristics I look for/ in the type of wife I would like to marry./ I would prefer my wife to be a fairly educated folk,/ I mean not too, say, highly educated./ I prefer my wife to be a teacher and a maximum qualification of [NCE]/ that is Nigerian Certificate of Education./

Y12

Before I came here I've been told that university is a place/ where every time one has to swot,/ read and read and read - no rest -/ and that it doesn't usually teach students many things./ They will only tell you the topic, then you have to find facts yourself/ and that one has to buy many books and there's no time to play./ So, but getting here now things are not as they have told me./

My present impression is that one has to work systematically/ as if one can be doing/ - as if one can be reading at least four hours a day/ and as soon as you are taught anything/ then you can revise it, it will stay./ But one needs persistent reading/ because if one says he will relax and do the work at the end/ he may not be able to catch up./ But if one is doing it little by little/ and is revising whatever you are told/ I'm sure one will catch up./ Even if he has no time to read when the exam is around,/ he will see that when he gets to the exam hall/ he will be able to remember many facts./ I was told before that there is no chance to play/ but I see that without playing one cannot enjoy the university life/ because there are a lot of games, at least one has to relax/ because no relaxation, no enjoyment - in fact if one says he will be reading all the time/ I'm sure he will not have friends/ and will not be happy at all./ So one has to work and play./

University life can be improved by introducing so many things./ One is accommodation./ The type of houses we live in is so congested,/ in fact the room is meant for one person,/ but I find that in many places three students are put there/ and in some two students/ and scarcely would one have chance to pass through./ And another one is feeding./ You see, our dining hall need to be enlarged/ because many times one may get to the dining hall/ and not find a place to sit down./ One has to wait until someone has finished before you get your food./

H1

Well, my father received some sort of modern education,/ so he realises the importance of modern education and the benefit of it./ Therefore he decided to send me to school to gain some knowledge/ and also to acquire.... what I can say..../.....well, to gain experience for future./

Well, the very day I was told that I would be going to a primary school/ I was overcome by fear/ because first of all I had never left my parents/ and secondly I didn't want to meet new people because/ that would be my first time of meeting small.../....many small children in one place./

One of the difficulties was that of making myself acquainted to the other students/, because we didn't speak the same language./ Some of them were [Yorubas], some were [Ibos] and some were [Fulanis]./

Well, I was first of all....I didn't..../ at that time I was becoming used to meeting new people/ so I was looking forward to the very day/ that I would go to a secondary school/ in order to meet more people/ and share their own experiences./

No, I preferred the senior part of it/ because when we were at the junior part/ we used to labour for other boys in this system called fagging system./ I was a fag for three years so I didn't enjoy it./

Well, I was among the 1st XI hockey players in the school/ and although not good in football I used to play for my House./ I used to keep for my House in football./ I enjoyed fives, we had Red Cross Society, Historical Society/ and also Scouts movement./ Red Cross, well,.first of all when I was participating in it/ I knew that I was rendering a sort of humanitarian service,/ so I gained some sort of satisfaction from doing such job./

H2

Well, in my society there's several ways of choosing a wife./ One of them is that, for example, both a boy and a girl/ can be engaged from their childhood./ For example, if I had a wife,/ well, one of the ways is that that wife might have been wooed by me/ when I grew up/ or perhaps when I was a small boy/ my parents and the parents of the girl/ might have been very tight friends/ and in that regard one of them/ will try to seek the agreement of the other/ in such a way that myself and the daughter of that person can get married./ Now, we can see the advantage of this,/ in that the bond of friendship will be tightened/ between both my parents and the parents of the girl./

That is one way./ And then the other way is usually when a boy has grown up/ and begins to feel that he has reached a time/ when he should start looking for a wife./ Then he can begin to look for a girl which....who is particularly suitable to him./

Well, the changes that are occurring is that, for example, in the first example/ which I gave, that is, getting a wife from childhood,/ well, this tradition is occurring very greatly/ because it has been understood that this system has some disadvantages. For example, when both the girl and the boy have grown up/ sometimes one of them feels that he doesn't like the other/ and as such if the marriage took place there would be unrest./ That is, instead of tightening the bond of friendship/ between the parents of the girl and the parents of the boy/ this bond of friendship tends to be weaker./

Well, if I'm going to look for a wife/ first and foremost as far as I am concerned/ is that I shall look first at her manners./ Now I can understand her manners by talking to her frequently/ and sometimes I can test her by saying something which can be.....provocative./ And then I shall study the way she is going to respond to that./

H3

Well, before I came here I heard a lot of stories/ about the university from my friends/ and from those who had been to the university themselves/ and the first impression I have got/ was that in the university one has to work for almost throughout the day./ There's no break at all and I used to have the impression/ that even no time was allowed to eat food and so forth,/ but then I was also told that...../ the work is left entirely to the students./ In other words, no notes such as we used to get in secondary schools are given,/ and one has to make references himself/ and I was also told that lectures are given by lecturers./ They just come and talk and talk and talk/ and then the students are expected to take notes/ and then organise the notes themselves./

Well, when I came here, of course I found that/ some of the things I was told are quite true, especially in lectures./ Well, the first time, the first lecture I had was two days after I arrived here/ and it was a history lecture./ I waited anxiously and the lecturer came in/ and he started to talk about South Africa./ I was surprised in fact, because I expected him to make sort of introduction,/ to make sort of introduction before we start the actual work,/ but then after.....at the end of the lecture/ he told us that we can refer to these lectures on so so and so so books/ and I went out and asked him what he actually meant/ and he said that was the first term's work./

Well, as far as recreation is concerned/ I think it is just too inadequate here/ but as far as other social activities are concerned,/ such as clubs, cinemas and so forth, I think they are all right./ We are given as much as we should have./

I think the best way by which the university life could be improved/ is by trying to train a person into his future life/ and I think the best way to do it is to encourage or rather/ to teach more of the traditional culture./

H4

Well, I think before I can answer that question/ I must mention about the background of my parents./ First of all, my father received a high education./ He has got this Nigerian Certificate.....Certificate of Teaching,/ but my mother didn't receive any modern education in that sense,/ only an Islamic education,/ so naturally my father knew the advantage of education./ He thought that by sending me to school I would be more useful in the near future/ and more useful to the community as a whole,/ not only to the family./ That's why he sent.....my parents sent me to school./

Well, I was a little kid at that time/ and when I was taken by my elder brother to the school/ I felt the school appeared to me like a big giant in front of me/ and at that time the boys are just going in the classes/ and I was very much impressed./ First of all my brother took me to the headmaster of that school./ I still can remember his name./ And when I went there he was sitting behind his table,/ a very big pompous man like that/ and his first question to ask me was "What was your name?"./

Well, at first we started learning these rudimentary elements of [Hausa] alphabets rather,/ because we didn't begin with the English alphabet right from the beginning./ But eventually when we reached Class Three/ we began learning English from the alphabets to the words./ Well, my first difficulty with my subjects lied.....lay primarily with arithmetic/ because I can say I am very poor at arithmetic and my teacher, [Mallam Zubeiru Usman]/ we're always at loggerheads with him./ I have to be looking at some boys' papers/ in order to solve my own arithmetic./

Well, secondary school, I would rather say that it's an old place to me/ because I was born there./ My father was the.....I think he's the first headmaster/ of that primary school.....secondary school./ At that time it wasn't a secondary school,/ in fact it was a middle school/ and I was born in it round 1944/ and therefore when I went there as a pupil/ it was rather a sort of natural phenomenon in my life/ because I had already known the place./

H5

The traditional ways of choosing a wife in my society,/ formerly it was the old, I mean the older people/ who dictate upon the young man for to select their own wives./ In other words the father and the mother/ would order the young man to take a wife,/ in other words love does not count here./ So, but of recent, anyway, things are becoming much fairer/ and it's left upon the young man to select the wife/ whom he thinks suits him./ But in the olden days again if a young man wants to choose a wife/ he would or he will, I mean, try to apply through his relatives/ so that they will eventually come and solve everything for him./

Yes, the changes which are actually occurring at present/ are that first of all money is becoming the basic determinant/ for a young man to get married and as such/ parents often have little or no influence over the young men./ In other words, there is complete independence/ for the young man to choose for himself./

Myself, the characteristics that I look for in choosing a wife/ are first of all physical beauty,/ how she appears to me, how much I am attracted to her/ and secondly her character./ I first of all study what kind of.....the kind of lady she's likely to become./ And then if I think that she pleases me/ and at the same time she loves me and I love her/ equal love between us and then surely I will fall in for her and decide to marry./

How I hope to select her? I don't mind./ For me, I mean, if we were to grow up together,/ it would mean little or nothing to me,/ but if I would come across a lady just anywhere/ and we happened both of us to fall in love with one another/ and then I was attracted to her and she was attracted to me,/ surely I would accept if she too accepted to get married./

H6

Before I came here I thought that/ university life is going to be something very strange./ I thought that the place would be quite foreign to me/ an alien institution where I am coming,/ and quite different from my surroundings in my home town/ and the other schools I had been attending./ But when I came here I found that it is not like that./

Yes, my present impression is...../that the university is not so much as I had been thinking about it./ It seems to me to be quite normal in some respects/ and I have settled in quite comfortably in the surroundings/ because I find some people from my own area/ who can speak the same language/ and share the same customs and beliefs with me./

The social life, we have got sports and societies./ There are so many societies in fact and all these societies

are mostly/ those who promote dancing and music and getting together of students./ Oh, well, I want to take part in debating societies/ and literary societies and the like./

Well, my main suggestion is that the students should be taught/ how to understand one another/ because we come from different parts of this country./ We don't share the same culture/ and I think this is a great hindrance to us,/ so students should be taught or should learn/ how to live together and understand one another./ Concerning hostel arrangement I think/ that the practice of putting three people per room/ and in some cases where you find two people sleeping/ in double bunk beds is not good./ It should be one room for one person/ and concerning food I think that some of the foods/ like [eba] and so on should be cancelled completely./

The university is not preparing me for my future career because/ my first impresion was that it is going to be an alien institution/ and when I came here, well, I found that/ some things are not as they seem to me from afar./ But there are some aspects of the university which are quite foreign to our country,/ example, it seems to me that it is much more based on the British system of education/ and this is not quite relevant to the Nigerian context./

H7

It happens because my father was educated/ and so he realised the value of sending boys to school/ and what would be the outcome later on in the boy's career./ When we were taken/....when we were admitted into our primary school/ we were just very close to our place/ so what is usually done is that early in the mornings/ those boys who are not sent to primary schools by their parent/ usually come and queue up/ so when we were passing they shout on us,/ "Oh, you Christians, Christians, you are diverting our religion, come back",/ and so on and so on and so on and so forth./ And what is usually done in the primary schools is that/ early in the morning we go out for P.T./ then after nine o'clock we are given breakfast and threepence/ if someone doesn't like to take the breakfast given by the authorities./ So, and after that we have usually three hours of writing on the ground./ The master usually gets a forefinger like this/ then he presses it hard on the ground,/ teaching us the way to write./ That's the first impression./

The first day I was there it was around in the evening that/ we arrived at Government College, [Zaria]./ Actually I didn't know anybody there/ so all what I had to do was to go to the notice board,/ try to check out for my name/ and find the hostel in which I am supposed to be./ After having done that I met with one boy I could remember./

I asked him of [Mallam Smith] House./ He was very good enough to take me to there,/ so when I went there I was given my bed/ and I found it's quite the opposite to what I...../ to my primary school.....experience./ Then after that..... and then I'm not used to eating a lot of ...../I mean having to dine with a lot of people in one room,/ so when I went to the dining hall/ I found that there were about hundred and twenty boys,/ all eating in one place so I felt shy/ I couldn't eat properly so I had to leave the place./

H8

Well, the traditional way of choosing a wife in our society is/ when you see a girl and you love her/ you just go to your parents and tell them/ that you see a girl and you want her hand in marriage,/ and so the parents will go... your own parents will go and approach the girl,/ the girl's parents and they will.....I mean, they will discuss about it with her/ and if they agree then they start, I mean/ they will come and inform you again./ Then there is something we call the dowry./ The dowry is then paid by your own parents/ to the parents of the girl./ Then after that you pay regular visits to the....to the house of the girl./ Usuallyit's weekly you go/ you converse with the girl and give her something, then you come out./

Well, the changes now which are occurring is/ that there is more of love now,/ rather than forced marriage because in the previous time/ you don't have.....sometimes you don't have to say this is the girl you want to marry,/ your parents may choose the wife for you./ But now you are to say the girl you want, you love/ and then the parents will seek for her for you./

Well, as an educated man, now I don't look for beauty only and good character./ I will also look for education,/ so that as our own society now is developing/ and I may have friends which my wife have to entertain,/ if she can't speak English or if she is not educated/ she'll not be able to communicate to them./ So I shall be looking for education also./ At the same time I would not like to choose a highly educated woman/ for example a graduate/ because, you know, she may be thinking that we are on the same level/ and so she may not be loyal to me./ But as for secondary school or the School Certificate,/ that's what.....that's the type of wife I want./

H9

Before I came here I thought university life is something very difficult/ because one has to be facing future with/ sort of encouragement from the school.....from the university/ but it is a great task for one because you are

made responsible/ for the care of your country at large and the world in general/ because you will be contributing more than those in other schools/ which are down in category with the university./

Immediately I came to this university/ I found that the life is very sociable even though one has a lot to do/ but if at all one is determined,/ he'll find that eyerything is going smoothly./ I found that in the beginning I had too much to do/ but now I am getting to...used....I am becoming used to it/ and I am finding the work a bit normal./

The social life in the university is highly commendable/ because if at all one is prepared to join societies, sports clubs etc./ he'll find the life very encouraging indeed/ more specially if one is good in, say, sports and other things like that./ I take part in table tennis, dancing/ and societies such as photography and so on./

The success of university life depends on the students/ because without their co-operation I don't think anything can be done tangible about it,/ and so if at any time advice is seeked from the univer....from the students/ and their own considerations being put into account/ I think university life would be much improved./ I should like to see something like welfare of the students/ because it is one the foremo....one of utmost importance/ as far as successful life is concerned./

I'm now taking course in agric....agriculture,/ and so agriculture being of utmost importance in the growing population of the world/ I think I will contribute a lot/ if I come out of the university successfully./

H10

Well, my parents did not intend to send me to school./ They were rather compelled to do it by the district head./ The district head sent one of his people to my father's house./ Then I was called an my father instructed me to follow the man./ I followed the man, then we went to the district head's house,/ then I was handed over to the headmaster of the school./

My first impression of the school life is that/ I was afraid of the teachers, not the boys/ because the boys were being playing about with them in the town,/ but the teachers, it was the first time I met them./

My first impression of secondary school/ is a change from village life to town life./ My former school was at [Dogon Daji]/ which is a remote village south-west of [Sokoto]./ When I came to [Sokoto] it was my first time of seeing/a large modern building and electricity./ And another change is that at primary school my teachers were Africans/ but at secondary school the teachers were expatriates./

I prefer the senior part of the school/ because in the senior....the senior boys have got many privileges./ The junior boys were rather like servants to the senior boys./ They do their washing and sometimes they even carry the food/ of the senior boys from dining hall to their rooms./ And during the games, while the senior boys were playing on the grounds/ the junior boys were sent to the compounds to do some sweeping/ and also to the farm to do some labour./

The societies and clubs were the dramatic society,/ historical society, science club and Young Farmers' club./ Well, I was a member of the Science club./ We hold our meeting on Saturdays, on Saturdays between nine and twelve./ We perform some various experiments in the laboratory./ The experiments were rather.....were mainly on chemistry and physics./ In sports I was rather not very active./ The games played at the school were/ hockey, football, cricket, baseball and volleyball./

H11

A traditional way of choosing a wife in my society/ is by family arrangements./ You see, the family will mostly first of all go and get in contact with the girl, say,/ then you approach your parents and tell them that you love that girl./ Then your family and the family of the girl/ will go and confer over it./ Then if arrangements are made,/ and they come to agreement, then you become married./

Changes that are occurring are that in some cases/ parents would like to see that their sons, anyway their children,/ are married to relative.....to other relative children./ But now with educated people, say,/ at all they wouldn't like to become so much intermarried in such a way/ so they p.....change an idea that they would like to marry a far-distant/ well, far, ...much non-related people./

First of all I would like to marry an educated girl,/ so what I would like to do is to get a girl,/ say, possibly from this university/ say, my own classmate or somebody like that./ Well, first of all manners,then beauty, then.....well, I think that's all./

Well, as I see now because.....as I've been brought up,/ you see well, anyway I didn't like the way I was brought up./ Not that I didn't like it, but, you know, there are some things that I didn't like..../ Well, there are some restrictions, you see/ which I think should not be made upon...../

I'll give them proper education as I'm given/ and fortunate to have been given/ and so I'll give them their due freedom and those such things./

Well, the disadvantage is getting more income for the family/ and one of the disadvantages is that, you know I am a Muslim/ so it's a bit awkward to my religion/ to allow my wife and go out working./

H12

In fact before I came here I have...../ I had very much regard for university students in particular/ because it was by then my main aim/ to get to this high institution/ and the people who belong to that institution I have high regard for them./ But to my surprise when I came to the university/ I found that life was not all that what I thought to be./ I think....I thought, for instance, before I came when I come to the university/ I'll be able to find people .....people who are not too old./ For instance, in fact in my class, for example,/ I found people who are even older than some of our lecturers./ If I were one of them I wouldn't have chosen such high courses,/ course that will take me, say, to five years in the university./

Well, it's in fact a sort of village of itself/ with everything.....in fact a modern village I would call it/ with all sort of possible amenities available/ and in fact socially the standard is a bit higher/ and in fact if somebody is sociable/ he finds the university life to be quite a great thing./

Well, in fact before I came to the university I was told/ that after your "A" Level course in your first year/ most of what you do is mere revision/ but when I came I found that it wasn't all that so/ because in fact the work we're doing now is, I would say, rather too much,/ working, say, from eight to five/ almost every day, except on Mondays and Saturdays./ I consider that work to be rather too much, in fact./

Well, in that respect I would say improvement over the present amenities,/ for instance during this hot weather if, say,/ the university authorities can, say, put fans in the sleeping rooms and other places/ and during the hot..... the cold season they can provide, say,/ gas heaters and other things/ such a.....I think it will be a bit comfortable for students to read even in their rooms,/ but now at this period/ it's very difficult for students to read in comfort there./

RP Speaker

Yes, well for our holiday this year we went to France./ We went by boat and of course our great fear was/ that it was going to be a stormy day/ but fortunately when

we got to Dover it was absolutely clear,/ the sky was clear, the sun was shining/ and we had no trouble at all./

Now this was a complete contrast with the time when we went by air/ because we went overnight, we got to the airport/ and I always remember we'd just got there,/ the sky clouded over and there was a most enormous thunder-storm./

APPENDIX II

Data on intelligibility failure between speakers and listeners in Connected Speech

Y1

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
secondary school	[sɛ'kɔndrI 'sku:]	country school school in my country county school -	Incorrect word stress on 'secondary'	4
I had strong aspiration for going	-	I had strong aspiration for - (2) I had strong - for - I had the strongest -	Incorrect syntax	4
seen	['sĩ]	- (3)	Elision of final /n/	4
those people	['dos 'pipũ]	do speak - (2)	/ð/ > [d] in 'those'	3
have really impressed me	[av 'rĭli m'prɛ̃z 'mi]	- reading - have really praised me - really praised me	Elision of initial /i/ of 'impress'	4
fundamentally	['fɔnda'mẽntali]	for my - for the moment for up to then for admittedly for mentally	/ʌ/ > [ɔ]	6
no aim	['ẽ]	no - (3) nothing	Elision of final /m/	4

(Y1 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
work	['wɔk]	walk (3) war - (2)	/ɜ:/ > [ɔ]	6
before I entered	[bi'fɔai/'enta]	that's why I entered before I - (2) if I entered	Incorrect phrasing - 'before I/ entered'	4
interesting	['ɪ̃itrɛstɪ̃]	- (2)	Elision of final /ŋ/	2
I have heard	[aiv 'had]	I have had (3)	/ɜ:/ > [a]	4
pioneering students	[ɒao'nɛ̃rɪ̃ 'studens]	- students (6) - mates primary students -	/aɪə/ > [ao] in 'pioneering'	9
started	['sta'ted]	studied (3)	/ɑ:/ > [a]	3
from any senior boy	[frɔm 'ɛ̃ni 'sɪ̃̃njɔ 'bɔi]	from anything from anyone from anything or from any single boy about anything from anything a boy for anything	Dental [s] heard as [θ] in 'senior'	7
since we were class-mates	['sɪ̃ns wi wa 'klasmeits]	was our classmates these were our classmates - our classmates so our classmates since our classmates	/3:/ > [a] in 'were'	5

(Y1 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
up to Form Three	[ˈɔp tuˈfɔm ˈtIri]	up to Form - - (5) up to - (2) after - after from three	/ɔ:/ > [ɔ] in 'Form' /θr/ > [tIr] in 'three'	9 9
there was a case	[dɛa ˈwɔs/ e ˈkes]	there was a price (2) there was a place I was - the hours it is the bows	Incorrect phrasing - 'there was/ a case'	6
a goal to be registered by an opponent	-	- an opponent to - an opponent a blow registered a good - by an opponent	Unusual syntax	4
I had my thumb turned	[ˈtɔmp ˈtɔnd]	I had my - turned (2) I had my - dried (2) I had my thump turned (2) I had my body turned I had my -	/θ/ > [t] in 'thumb'	8
I had to be rushed to the hospital	[ai ˈhad tu bi ˈrɔst tu dI ˈɔspitũ]	because he asked me to I didn't have to go to hospital So I had to be -	/ʃ/ > [s] in 'rushed' Syllabic /l/ > [ũ] in 'hospital'	3 2

(Y1 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occurrences
I restrained from footballing	-	be restrained from football I was trained in football	Incorrect syntax	2
I heeded her advice	[ai hi:'ded ha ad'vais]	I took it I advised her	Incorrect stress in 'heeded'	2
warned	['wɔn]	wanted (2)	/ɔ:/ > [ɔ]	2
tenniquoit	['tɛni'kɔit]	- (4)	Unfamiliar lexis	4

Y2

know the time	['no dI taĩm]	notify the time know - denote the time will tell note the time	Incorrect rhythm: stress on 'know' only /ð/ > [d] in 'the'	3 4
specific physical appearance	['fizi'kal]	specific - appearance (3) specific personal appearance	Incorrect word stress	4
certain shape	['satn 'ʃep]	funny shape some shape - shape sudden shape - (3) friendship	/3:/ > [a] in 'certain' /eI/ > [e] in 'shape'	8 4

(Y2 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
let's say	['lɛs se]	later -	Incorrect rhythm	2
will no more exist	-	will not no exist will not exist	Incorrect syntax	2
Christian gathering	['kəɾʃn]	- gathering (2) different gatherings	Metathesis	3
certain girls	['satin]	- girls southern girls	/ɜ:/ > [a]	2
associate yourself with them	[aʃo'ʃiet]	- (2) you say to yourself(2) introduce yourself to them attitude yourself as you say to them adapt yourself to them	Incorrect word stress	8
sound standard of living	['sɛ̃nd 'sandad]	- standard of living - of living sound sort of living certain standard of living (2)	/aʊ/ > [ɛ̃] in 'sound' /st/ > [s] in 'standard'	5 2
basic advantages	['besIk]	big advantages biggest advantages - advantages (2)	/eI/ > [e]	4
which means (that)	['wi 'mɪ̃:]	with me (3)	Elision of final /tʃ/ in 'which' Elision of final /nz/ in 'means'	3 3

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
my thought about university life	['tɔt]	at university life - the university (2) - (3) my daughter worked in the university my daughter -	/θ/ > [t]	8
it would look much like	['moʃ]	it would look like(3) it looked more like - it looked most like - I like -	/ʌ/ > [o]	7
in secondary school	['sɛkɔndI]	the second school to school at school - school about this school	/dr/ > [d]	5
where everything was virtually made	['wɛa/ ɛvri'θin 'wɔz/ 'vatjuli 'med]	- (6) where everything was - (2) where everything was without	Incorrect phrasing: 'where/ everything was/ virtually made'	9
compulsory for the boys	[kɔm'pɔlsri]	most of the boys - for the boys (6) composed mostly of boys mostly boys	/ʌ/ > [ɔ]	9
where	['wɛa]	we are we - (2)	/ɛə/ > [ɛa]	4

(Y3 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
depend	[di'pent]	paint painting - (2)	Final /d/ > [t] in 'depend'	4
we rely on	['wiri 'laiɔ̃]	we were allowed to (3) to allow we allowed (5) we allow	Incorrect rhythm	10
research	[ri'satʃ]	as such - (8) - such	/ɜ:/ > [a]	10
write the notes	['nos]	write the news - for us write - - - things - the nose	Final /ts/ > [s]	6
I met the contrary	-	- contrary - in the country - the country	Incorrect lexis	4
we were left to do	['wia 'levt]	where I live to do (2) where I have to do one lived to do who are left to do	Incorrect elision of 'we were' /ft/ > [vt]	5 4
the teacher does the less	-	- liss they teach us less the teacher was less the teacher was train-ing us less the teacher was - -	Incorrect syntax	8

(Y3 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
(cont.)		the hours - just listened		
the life here is	[di'laifhɛəs]	lately I - (3)	Rhythmic compression	4
quite fine	['fãĩ]	quite high -	Elision of final /n/	2
academic aspect	-	academically quick academic - economic aspect	Unusual lexis	3
we're being trained	[wia 'bin trend]	I'd been teaching - (3) we're reaching	Incorrect rhythm	5
we're being made	[wia 'bin med]	we had been we're being - (2) - (3)	Incorrect rhythm	7
parents	[pe'rẽns]	- (5)	Incorrect word stress	5
the social life	['sʃal]	since I left - life we shall have - student life you shall - usually	Elision of first vowel of 'social'	7
it isn't possible	[it 'isn pɔsũ]	- (3) suppose that	Elision of medial syllable of 'possible'	4
working	['wokĭ]	walking (4)	/ɜ:/ > [o]	4

(Y3 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
the social aspect of university life	[so'ʃaspɛkt]	this is what university life (2) this is one of the aspects of university life this is what aspect the university life this is one aspect of university life the future aspect of university life this is what you expect of university life - university life one aspect of university life (2)	Elision of final syllable of 'social'	10
has provided	['az]	did as provided is provided I hate	Elision of initial /h/	4
clubs	['klɔbz]	- (8) close (2)	/ʌ/ > [ɔ]	10
where one could reside	[rI'said]	to whom I decide where one could decide where one can decide - (2) with outside - on the side - out of sight	/z/ > [s]	9
Many other things	['tɪ̃ns]	many letters - (5)	/θ/ > [t]	6

(Y3 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
table tennis	[tebŭ tɛ'nis]	tennis (3)	Incorrect rhythm	3
recreation	['re'krieʃn]	- (5)	Incorrect word stress	5
spend his leisure time	['spɛndIz]	plenty leisure time (2)	Rhythmic compression	2
too much freedom	['fri'dɔm]	we don't really too much - (5)	Incorrect word stress	6
out of the campus	['kam'pɔs]	out (2) out of the compost	Incorrect word stress	3
it will be necessary	[itŭbi'nɛ̃zri]	it is - (6) it - it would be nice if it is due -	Rhythmic compression	9
enforces	[en'fɔsis]	- (5) and forces can enforce its	/ɔ:/> [ɔ]	7
laws	['los]	- (6)	/ɔ:/ > [o]	6
rules	['ru:z]	- (6)	/lz/ > [z]	6
the boys' movement and freedom	[muv'ment..... fri'dɔm]	the boys' movement every day boys' freedom (2) the boys - the boys who	Incorrect word stress in 'movement' and 'freedom'	4 4
some supervision is given	['spaviʃn]	some boys give some - is given (4)	Elision of /u:/ in ' supervision'	7

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
(cont.)		since permission is given some attention is given		
about feeding and accommodation	[ˈfi:din]	I would - accommodation (3) as to the freedom of accommodation - accommodation the thing about accom-modation I would find different accommodation	Final /ŋ/ > [n]	7
little freedom	[litũ friˈdɔm]	to freedom - freedom (2) - (2) less freedom	Syllabic /l/> [ũ]	6
enough space	[ˈinɔf spes]	enough - enough place (2) - enough peace	Incorrect rhythm	5

Y4

get away from my parents	[ˈgɛt əwe]	- my parents get - my parents	Incorrect rhythm	2
the more so as we had	[ðIˈmɔ:soəz]	the master we had (2) - we had the worst was we had (2) - the worst one we had the - as we had	Rhythmic compression	8

(Y4 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occurrences
I didn't encounter much	['ai dIdnt ɔ'kauntə]	I didn't count on much(2) I can't tell much	Elision of first syllable of 'encounter'	3
by way of difficulties	['bəweiəv]	Other difficulties (2) - difficulties no difficulties a lot of difficulties I had difficulties there were difficulties I wanted to go	Rhythmic compression	8
my parents	['piərəns]	my appearance my appearances my experience	/ɛə/ > [iə]	3
Transferred a lot	-	- a lot a friendly lot	Unfamiliar lexis = 'posted to a new job'	2
I used to ride there	['rai ðɛə]	I used to arrive there(5) I just to arrive there	Elision of final /d/ in 'ride'	6
the interval	[intə'val]	the only trouble the entire	Incorrect word stress	2
struck	['strɔk]	taught (2)	/ʌ/ > [ɔ]	2
Federation	[fɛd're∫n]	Nigeria - (2)	Elision of second syllable	3
the few I made	['med]	the few I meet the fewer I meet	/eI/ > [e]	2

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occurrences
for choosing	[ˈfɔ̃tʃusin]	- (5)	Incorrect rhythm	5
wife	[ˈwãĩ]	- (5)	Elision of final /f/	5
normally	[nɔ̃ˈmali]	really no matter what mainly - (2)	Incorrect word stress	5
happens	[ˈhapũz]	- (2)	/nz/ > [z]	2
in the traditional sense	[ˈsĩns]	in the tradition - - in traditional - in the tradition of things	/e/ > [ĩ]	4
then usually	[ðɛ juˈʒali]	they arrange really later he sees it as - (3) a year later an a year	Incorrect word stress on 'usually'	8
when they were	[ˈwa]	when you are (2)	/ʒ:/ > [a] in 'were'	2
both couples	[boθ ˈkɔ̃pũz]	many couples (2) - (2) young couples both the -	Incorrect rhythm	6
in order to keep	[ˈĩn ˈɔ̃da ˈtu ˈkip]	you care about - - keep they have to keep you know we keep	Incorrect rhythm	7

(Y5 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
(cont.)		you know how to keep so that can keep		
they usually make	[ju'ʒiali]	- make (4) the men can make	Incorrect word stress	6
are introduced to each other	['intro'djust]	are interested in each other interest each other are attracted to each other introduce each other	Incorrect word stress	4
they get used to each other	['gɛt just]	they kissed each other against each other - - to each other introduce each other (2)	Incorrect rhythm	7
marriage	['mariʒ]	- (3)	Final /dʒ/ > [ʒ]	3
has to be done	['dã]	has to - -	Elision of final /n/ of 'done'	2
normally	[nɔ'mali]	no money no longer (2) nobody	Incorrect word stress	4
many of us	['ɔz]	many of the girls many of those many - (3)	/ʌ/ > [ɔ]	5

(Y5 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
parents	[ˈpereɛz]	- (4)	Final /nts/ > [z]	4
of the age to marry	[ˈetʃ]	each decide to marry - (2) he wishes to marry is very sure	Final /dʒ/ > [tʃ] in 'age'	5
he tells his choice	-	he - his choice he takes his choice (2)	Incorrect lexis	3
the parents arrange	[ˈarentʃ]	the parents are arranged (4) his parents - the parents are reached	Incorrect word stress	6
they wouldn't refuse	[wũnan]	the woman refuses (6) - refuse (2) the woman -	Incorrect elision of 'would not'	9
the choice of their son	[ˌɣði ˈtʃɔiz ˈɔv ˌðɛ ˈsɔn]	the choice if they are small his choice - the choice quite so choice - son chooses a person	Incorrect rhythm	5
having a wife	[ˈhavina]	how many wife (2) have many wife how many wives	Rhythmic compression	5
normally	[nɔˈmali]	is too many no money (5) the money nobody (2)	Incorrect word stress	9

(Y5 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occurrences
economic	[I'kɔnomik]	community (2) culinary - (2) commonwealth	Incorrect word stress	6
earns	['ãnz]	has (2)	/ɜ:/ > [ã]	2
greatest disadvantage	[dĭzad'vantidʒ]	advantage (3)	Incorrect word stress in the context - stress should be on 'dis'	3
works	['wɔks]	ought walks	/ɜ:/ > [ɔ]	2
interesting	[in'trɛstin]	interested (4) - (3)	Incorrect word stress	7
could break a family	[kud 'brek 'ei fam'ili]	could British family could Britify many could break you finally	Incorrect rhythm	3

Y6

When I was in the [H.S.C.]	['wɛn 'ai wɔz n ðI [HSC]]	when I was - (3) -	Incorrect rhythm	4
to realise that	[tuər'laiz]	to work at - (4)	Metathesis	5
university work	['wɔk]	mainly was - (6) university -	/ɜ:/ > [ɔ]	8

(Y6 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
isn't as much	[iz'int]	- as much (4) with as much is as much which is most	Incorrect elision of 'is not'	7
banked	['baŋkt]	bumped - (3) planned	/æ/ > [a]	5
having a very nice time	[havin ə vəri 'nais taim]	- (2) - very nice time	Incorrect rhythm	3
people	['pipũ]	- (2)	Syllabic /l/ > [ũ]	2
having much time to myself	['haviŋə 'mɔʃ taim tu mai'sɛlf]	- down to myself never had much time - much time to myself	Incorrect rhythm	3
a little bit over-bearing	[ə'va 'berin]	a little bit - a little bit too bad a little - (2) a little bit above a bad living - (3) a little too	Incorrect word stress	10
especially when	[eʒ'pəli]	as when - (6)	Metathesis	7
I came first	[ai 'kem fəst]	self interest - first - feel first - interest	Incorrect rhythm - no stress on 'first'	4

(Y6 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occurrences
going to lectures	['lɛtʃə s]	- (4) let H.S.C.	/ktʃ/ > [tʃ]	5
isn't a part	['izin]	is the only part is a part (2) in the part integral part	Incorrect elision of 'is not'	5
an hour writing	-	- writing (3) and write - (2) now writing now -	Unusual syntax	8
40 minutes class	['fɔti]	40 in the class fourteen - fourteen weeks class	Final /I/ > [i] in 'forty'	3
break	['brek]	drink -	/eI/ > [e]	3
in the university	[Iðˣ juni'vəsti]	in this - this year it - (2)	Incorrect elision of 'in the'	4
environment	[ɛn'vairən'ment]	4 (4)	Incorrect word stress	4
I'm not given too much work to do	['ai 'am 'nɔt 'givIn tu 'mɔʃ 'wɔk 'tu 'du]	I was given a lot to I am not willing to do I am not going to I am not going to a - (2) I am not - doing it I am - (2) I am not going to do - because of you	Incorrect rhythm	10

(Y6 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
too much people	[tu 'mɔʃ 'pũ]	- (10)	Incorrect elision of first syllable of 'people'	10
lecturer	['lɛʃra]	- (5)	/ktʃ/ > [ʃ]	5
taking	['tekin]	take in - (3)	Final /ŋ/ > [n]	4
history	['hisri]	- (3)	/str/ > [sr]	3
reference books	['rɛfɛ'rɛnz 'buks]	- books (3) - (2)	Incorrect word stress in 'reference' /ʊ/ > [u]	5 2
as well read the books	-	with only the books in so many books as I read the books - - books as we read the books	Incorrect syntax = 'read the books as well'	6
I don't see the reason	[ai 'doun sI dI 'ri'zin]	there's no reason I don't see there's a	Incorrect rhythm	2
not what I admire	['nɔt/ 'wɔt/ ai ad'maiə]	not what - notes where not why my mother not what my - not what I - not -	Incorrect phrasing - 'not/what/I admire'	6

(Y6 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
very much socially	[so'ʃali]	-(4) very much necessary is necessary very much really	Incorrect word stress	7
hostel accommodations	[hɔs'tel]	- conditions the host of accommoda- tions - accommodations two editions	Incorrect word stress	4
trying to do about it	['traiin tə du 'abaut 'it]	trying to do to you trying to - trying to govern trying to do - - to do - (2)	Incorrect rhythm	7
at present	[at 'prɛ'zent]	- (4) my friend	Incorrect word stress	5
we are 3 in a room	-	- three - there are three - - are free now flea in the roof	Unusual syntax	5
I don't think	[ai 'doun tiŋk]	the only when - - (4)	/θ/ > [t]	6
it is convenient	[it iz 'kɔn'viniənt]	university is convenient - (4)	Incorrect word stress in 'convenient'	5
secondary school	['sɛ'kɔndri]	country school (2) - school	Incorrect word stress in 'secondary'	3

(Y6 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occurrences
staying around with people around	-	staying around - (9)	Unusual lexis	9
work	['wɔk]	walk (2) - (4)	/ɜ:/ > [ɔ]	6
rooms	['rũ:z]	- (6) would wouldn't	Final /mz/ > [z]	8
I expected	[ɛ'spek'ted]	- (8) I also say so	Incorrect word stress	9
private places	['plesiz]	private classes - (5)	/eI/ > [e]	6
3 in a room	-	three - (3) - (3)	Unusual syntax in the context	6
doesn't sound well	-	doesn't seem well (3) -	Unusual lexis in the context	4

Y7

first sent me	['fɔs]	have sent me - sent me (3)	/ɜ:/ > [ɒ]	4
two main reasons	['men]	too many reasons -	/eI/ > [e]	2
to help raise my family	['rez]	to help with my family(2) to help my family	/eI/ > [e]	3
primary school	['paimɔri]	- school (2) Paris school	Initial /pr/ > [p]	3

(Y7 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
canes	['kẽnz]	- (2)	/eI/ > [ẽ]	2
at first	['fɔs]	of course (6)	/ɜ:/ > [ɔ]	6
run back	['rɔm 'bak]	roam back (2)	/ʌ/ > [ɔ]	2
I got to Government college	['gɔvmən]	I got to go to college(2) I got to college (2) I got to go in college(3) I got to - college I got -	/ʌ/ > [ɔ]	9
January	['dʒɛnuari]	generally (3)	/æ/ > [ɛ]	3
I first entered	[fɔs 'ɛnta]	was - (2) first - -	Incorrect rhythm	4
I got to the school	['go tu]	I go to the school (2)	Elision of final /t/	2
I heard a tapping	['hɛd]	I heard a - I had to - I had a - -	/ɜ:/ > [ɛ] Incorrect lexis = 'felt'	3 4
on my body	['bodʰ]	on my - (2) on my bed in the - -	Elision of final syllable /I/	5
I found a prefect near me	[ɒrI'fɛkt]	I finally - I found - near me - (3)	Incorrect word stress	5

(Y7 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occurrences
bed	['βed]	way - (3) mate	/b/ > [β]	5
not knowing what to do	[nɔ'noĩ wɔtju'du]	wondering what to do (4) - to do (2) now what shall I do - what you do	Rhythmic compression	8
went to the dining hall	[dainĩ 'hɔ]	- (3) - very - wasn't late any more I was late anyhow	Incorrect rhythm	6
I saw others	['sɔɔ̃das]	I saw these I saw us I saw - (2)	Rhythmic compression	4
I heard	['hed]	I had (7)	/3:/ > [e]	7
some strokes of the bell	-	some - (2) - (2) - ring bell serving bell through some bell	Incorrect lexis	7
not knowing what to do	['nɔ̃nõ 'wɔtu'du]	none knew what to do - knew what to do I - what to do wondering what to do	Rhythmic compression	4
a prefect came near me	[prI'fɛ]	a - came near me (3) - (3) it for - you a friend came near	Incorrect word stress	10

(Y7 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
(cont.)		a friend came around a girl came near me		
not disobeying	[ˈnɔ̃disoˈbɛ̃]	- to be - obey - (5)	Rhythmic compression	7
after having seated myself	[ˈaftəavɪ̃ siˈte mai'sɛlf]	after I said to myself - - selling myself - myself after - myself I was to tell myself - to myself	Rhythmic compression	7
the principal	[ˈprinsˈpal]	the prosper the - (2) a -	Incorrect elision	4
stage	[ˈstetʃ]	station state	Final /dʒ/ > [tʃ]	2
he announced a hymn	[ia'naũst ei'him]	I - him (3) I no see him I announce him I announced him -	Rhythmic compression	7
he welcomed new students	[hi 'wɛlˈkomd nju stu'dɛ̃nz]	he welcomed us (2) - he welcomed the students he spoke to us	Incorrect rhythm	5

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
marriage	['mari]	marry (3) money	Elision of final /dʒ/	4
it will be	['itũ bi]	to be (5) there -	Incorrect elision of 'it will'	6
love	['lɒf]	- (3)	/ʌ/ > [ɔ]	3
can be made	['kã bi met]	- (3) comes with it can - come late	Incorrect rhythm	6
due to the present educational changes	[di 'prɛ'sɛnt ɛdʒuke'ʃnal]	due to the present - changes due to the pressure - due to depression in educational changes	Incorrect rhythm	4
introduce her to	[intro'dusi tu]	visit to (6) the duty of to - to	Rhythmic compression	8
up to the present moment	['ɔp tu di]	at - moments at the present moment (2)	/ʌ/ > [ɔ]	3
look into	[luk in'tu]	looking to (6) - to looking for	Incorrect word stress on 'into'	8
the marriage will be	['mari]	it might be they may be	Elision of final /dʒ/	2

(Y8 - continued)

Text /Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
characteristic	['ka'ra'tɛ'ristik]	issues at issue - (2) crisis	Incorrect word stress	5
manner	['mana]	- (2)	/æ/ > [a]	2
manner maketh a man	[me'kɛθ]	manners because a man manner because a man -	Incorrect word stress on 'maketh'	3
how high I will actually prefer	[au'ai:]	- (4) - I will actually prefer - I would prefer	Rhythmic compression of 'how high I'	6
actually	[aktʃu'ali]	after all (2) after -	Incorrect word stress	3
hardship	['ha'ʃip]	- 4 (4) the hasheba the hashib	/a:/ > [a]	6
encountered	[ŋ'kaun'tə:d]	content (3) contact -	Incorrect word stress	5
I started school very early	[ai'statɛdskũ]	I suffered from - - I actually I - very highly I sat the school leaver I - I suggest -	Rhythmic compression	7
on time	[ã 'tãi]	at all -	Elision of final /m/	2

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
I passed out in 1954	-	- school in 1954 I started a - in 1954	Unusual lexis (= left school)	2
secondary modern school	['mɔ'dɑ̃n]	secondary school (2) secondary - - school	Incorrect word stress on 'modern'	4
I roamed about	[romt e'baut]	I - (4) I worked alone	Final /d/ ≻ [t] in 'roamed'	5
taught	['tɔt]	- (2)	/ɔ:/ ≻ [ɔ]	2
admitted	[admi'ted]	entered (2)	Incorrect word stress	2
modern school education	[mɔ'dɑ̃ 'sku]	mother's coeducational mother's good educational mother's good education	Elision of final /rn/ of ' modern'	4
I was given a double promotion	-	I - I was given - (4) I was given a document I was - (3)	Unusual lexis	9
I ran the course	['ran di 'kɔs]	- (2)	/ɔ:/ ≻ [ɔ]	2

Y9

In point of fact	[mpɔ̃inə'fakt]	- (6)	Rhythmic compression	6
I have no idea whatsoever	['nõ/ aidɛə wɔt/ 'soɛva]	- (5) no - whatsoever	Incorrect phrasing 'no/ idea what/soever	6

(Y9 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
what university life would be	['wɔt jũn'vasti laiv/ wud 'bi]	- - will be what life would be what you must allow would be what sort of life it would be about working in - - would be	Incorrect phrasing 'what university life/ would be'	7
so many tales	['telz]	so many theories so many terrors	/eI/ > [e]	2
ranging from the relationship	['redʒiŋ]	relating to the relationship (2) - reading from the relationship ready for the relation-ship	/ndʒ/ > [dʒ]	5
they're meant to do	['met]	- had to do we had to do they would do -	/nt/ > [t]	4
as we often read	['ɔfənt]	- we all have read as we - were often ready	Consonant cluster /ft/ metathesised	4
are often acclaimed	[a'klem]	claim (4) are claim are claimed have a claim	Final /md/ > [m]	7

(Y9 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
fathers	[fa'ðaz]	fellows - (4)	Incorrect word stress	5
their life	['laiv]	- (7) they arrive	Final /f/ > [v]	8
in very referred positions	-	in very - positions in very fat positions in very refined positions (2) in these very sad posi-tions in very sort of positions in certain positions	Incorrect lexis	7
they are made	[a 'med]	they admit - (2) the midday	/eI/ > [e]	4
enough materials	[i'nɔv]	note materials - materials (2) new materials	/ʌ/ > [ɔ]	4
some necessary materials	['nɛəsri]	- materials some methods and materials some methods or materials some methods - (3)	/s/ > [θ]	7
the guidance	[gai'danz]	the guidelines guidelines	Incorrect word stress	2
students would go	[su'denz]	soon as you go - to go as soon as we go	/st/ > [s]	3

(Y9 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
I will call it	['kɔl]	- of our colleagues - college (2) of our college (5) at college	/ɔ:/ > [ɔ]	10
if he doesn't behave	[ivi 'dazn/bi'hev]	- it doesn't behave - doesn't behave	Incorrect phrasing 'if he doesn't/behave'	3
hate	['et]	aid eat - (2) hit	Elision of initial /h/	5
I sort of talked with	['tɔgd]	- (4) I told as sort of told	/ɔ:/ > [ɔ]	6
the reverse of the impression	[ri'vaz]	the - their advice or impression (3) the - or the impression the impression (2) their advice and their impression (2)	/ɜ:/ > [a]	9
I've been made	['aiəv/ bĭ'med]	of being made (3) of - of me (2)	Incorrect phrasing 'I have/ been made'	6
sat for	['safɔ]	suffered (4) - (2)	/æ/ > [a]	6

(Y9 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occurrences
according to how he enunciated	[I'nanʃie'ted]	according to - (4) according to our (2) according to how we - according to how he - according to how we treated	Incorrect word stress	9
most of the things	['t̪̃ŋz]	it seems most of it seems (2)	/θ/ > [t̪] heard as [s]	4
conscientiously	[kɔn'tʃɛn'tʃə s'li]	continuously (4) - (2)	Incorrect elision	6

Y10

I was young	['jɔŋ]	I was three year old I was - (3)	/ʌ/ > [ɔ]	4
realising	[rɛa'laisiŋ]	- (10)	Incorrect word stress	10
the importance of education	[impɔ'tans]	- education (8) -	Incorrect word stress	10
I happened to be	['hapũ]	am happy to be -	Final /nd/ > [ũ]	2
male boys	['mel]	- boys (3) main boys -	/eI/ > [e]	5
my predecessors	[pri'sidesəs]	my - (4) - (3) my parents said	Metathesis	8
had been going	[a 'bi]	are be going	Elision of final /d/	5

(Y10 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
(cont.)		- (3) I'd be going	Elision of final /n/	5
I think.	['tiŋk]	I take (2) - (2) I was taken (2)	/θ/ > [t]	6
wherever he goes	['wɛrva i'gos]	- (2)	Rhythmic compression	2
he hates this idea	['hez]	he decided he has this idea (3) he had this idea - - his -	Final /ts/ > [z]	7
a farmer like himself	['fama]	a - a family conserve a family concern (2) - myself a family -	/ɑ:/ > [a]	6
not even up to the age	[nɔ'tivin 'ɔptudi'edʒ]	- (6) not - today (2) not taking off today up to the age	Rhythmic compression	10
senior brothers	-	- sisters and brothers (2) - brothers	Unfamiliar lexis	4
I was realising nothing	['nɔ'tin]	I was realising not enough (4) - I was realising I why not in I was realising not in	/ʌ/ > [ɔ]	9

(Y10 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
primary school	['paiməri]	provincial school new school - school my school by my school	/pr/ > [p]	5
pupils	['pipũ]	people (6)	Elision of /j/-glide: /pju:/ > [pi]	6
meal	['mil]	- (5) I mean	/i:/ > [i]	6
recreation	[rɛkrie'ʃã]	- (5) our teacher	Incorrect word stress	6
I only like	[ai 'ɔ: 'laik]	I all like (3) I always like we all like my own liked they all like	/əv/ > [ɔ:] in 'only'	7
I come to the age of	[ai'kɔm'tudi'edʒəv]	I come to realise I - today	Rhythmic compression	2
I have to learn	[ai av tu 'lan]	I ought to learn I got to - after lunch I often laugh	Elision of /h/ in 'have' /ɜ:/ > [a] in 'learn'	4 3
in a real sense	['ria 'sẽns]	- (8) - glasses	Elision of final /l/ in 'real'	9
number one	['nɔmba]	one by one (6) - (3)	/ʌ/ > [ɔ]	9

(Y10 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
after my brother has left	[brɔ'da]	- (2) - left - I left (2)	Incorrect word stress	5
reminding me	[ri'maĩ'diŋ]	- me (2) demanding me - (3)	Incorrect word stress	6
some things	['thĩs]	something some case and this	Final /z/ > [s]	3
not the usual way	[ju'ʃal]	- (9) not -	Incorrect word stress	10
my area	['eria]	my idea (3)	/ɛə/ > [e]	3
attitudes	['atítu:z]	- (4) aptitudes	Final /dz/ > [z]	5
not all that pleasant	['nɔtolda 'ple'sant]	not one hundred percent at all - not very unpleasant not all complacent altogether unpleasant	Rhythmic compression	5
forced on me	['fɔsãmi]	for someone (2) for - (2) forcing me for something for me	Rhythmic compression	7

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
her	['ha]	how (7)	/3:/ > [a]	7
suitable	['sjuti'bũ]	she will suited soon you	Final /l/ > [ũ]	3
her house	[a]	a house (8)	/3:/ > [a]	8
welcome you	['wɛl'kɔm'ju]	work on you (4)	Incorrect word stress in 'welcome'	4
the only thing you need to	[di'onli 'θĩ ju 'nĩ tu]	the only - (3) the only failing	Rhythmic compression	4
through her behaviour	['tru]	true her behaviour - her behaviour too - to a behaviour	/θ/ > [t]	4
husband of the lady	[ɔ]	husband or the lady (2)	Elision of final /v/ in 'of'	2
turn	['tɔn]	tone (4) toll	/3:/ > [ɔ]	5
you actually go out	['aktʃu'ali]	you are - go out (4) you are fairly good you are - you are fairly go out you have to really go out you are encouraged you are fairly keen	Incorrect word stress	10

(Y11 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occurrences
she only need to present	-	she won't need to present she will need to present (2) -	Incorrect syntax	3
she	[ˈsi̪]	say they (2) -	/ʃ/ > dental [s]	4
has chosen	[as ˈtʃosɪ̈]	as - - are to see are choosing	Elision of initial /h/ in 'has'	4
he would approach	[i'wu a'protʃ]	you approach (5) you are approaching (3) you will approach	Incorrect elision in 'he would'	9
prefers	[pri'vas]	provides (3) approves (2)	/f/ > [v]	5
actually going	[ˈaktʃu'ali]	having to go he try going - you find you're going - going I try going	Incorrect word stress	6
almost difficult	['ɔl'mos]	always difficult (5) quite difficult	Final /st/ > [s]	6
fairly educated folk	['fo]	fairly educated fool (2) fairly - - (2) fairly beautiful fairly pitiful	Elision of final /k/	7

(Y11 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occurrences
qualification	['kwɔlI'keʃn]	- (3) qualified holding	Incorrect elision of medial syllable /fi/	4
Nigerian	['naidʒi'rãn]	- (2)	Incorrect word stress	2
Certificate of Education	['satf'kat]	centre of education certified of education - (2)	Incorrect elision	4

Y12

university is a place	[juni'vasIti/ is e ples]	university - (2) university places (2) university discipline university place	Incorrect phrasing; university/ is a place	6
no rest	['rɛs]	no race - (2)	/st/ > [s]	3
it doesn't usually teach	['dou Iʃu'ali]	- teach (2) - (2) it usually teach that usually teach they do usually teach university teach do not surely teach the usually students	Incorrect elision of 'does not'	10
they will only tell you	[ðe 'wI 'õnli 'tɛ'ju]	they only - - (2) they only define when they tell you	Rhythmic compression	5
books	['bus]	- (2) boos	/ks/ > [s]	3

(Y12 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
play	['ple]	plea (2)	/eI/ > [e]	2
things	['sĩns]	since (9)	/θ/ > [s]	9
work	['wɔk]	walk (3)	/ɜ:/ > [ɔ]	3
as if one	[az'ivwɔ̃]	as you all - (4) before - (2) for -	Rhythmic compression	8
reading	[ri'din]	- (7)	Incorrect word stress	7
4 hours a day	['fɔ 'auəs e 'de]	for our city -	Final /z/ > [s]in 'hours' /eI/ > [e] in 'day'	2 2
you are taught anything	['tɔt]	you have - you have done anything you are told anything	/ɔ:/ > [ɔ]	3
it will stay	[it wi'ste]	each day - (8) with three words	Incorrect elision in 'it will'	10
one needs	['nis]	one is (5) - one has when with	Final /dz/ > [s]	8
if one says	['ivwɔ̃ses]	- (5) everyone says (2)	Rhythmic compression Assimilation of 'if'> [iv]	5 2
catch up	['kaʃ ɔ]	catch you - cash your	Final /tʃ/ > [ʃ] /ʌ/ > [ɔ] in 'up'	2 3

(Y12 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
when the exam is around	-	when - - when the exams are on (2) when the exams arrive if he has examined	Unusual lexis	9
exam hall	[ɛ'zam 'hɔl]	- (5) exam - (2) exam table example	/gz/ > [z] in 'exam' /ɔ:/ > [ɔ] in 'hall'	5 9
I see	['si]	I say (5) I think (2) I feel	/i:/ > [i]	8
enjoyment	[ɛ̃ndʒɔi'mɛ̃]	- (7)	Incorrect word stress	7
by introducing	['introdju'sin]	by interest in by - -	Incorrect word stress	3
meant	['mẽt]	made (6)	Final /nt/ > [t]	6
three students	['θIri]	- many students (3) - students	Initial /θr/ > [θIr]	5
scarcely	['skasli]	secondly -	/ɛə/ > [a]	7
would one have	[wu'wãnhv]	we won't have - (4)	Rhythmic compression	5
feeding	['fi'din]	- (2)	Incorrect word stress	2

(Y12 - continued)

Text/Word	Pronunciation of Key Word	Listeners' responses	Likely cause of error	No. of occur-rences
one may get to	[ˈwãmeˈgɛtu]	one may criticise - when we get	Rhythmic compression	3
dining hall	[ˈdainɪ̃ ˈhɔ]	- (4) another hall	Elision of final /ŋ/ in 'dining' /ɔ:/ > [ɔ] in 'hall'	5 4

H1

modern education	[ˈmodəˑn]	- education (3) further education	/ɒ/ > [o]	4
the benefit of it	-	- - of it	Unusual syntax	3
to gain some know-ledge	[ˈgen]	again to get some know-ledge to get some knowledge -	/eI/ > [e]	3
acquire	[əˈkwaijə]	apply_	/aIə/ > [aijə]	2
in one place	[In ˈwã̃ ples]	- (2)	Incorrect rhythm	2
acquainted	[ˈakweintId]	- (2)	Incorrect word stress	2
looking forward	[ˈfoˈwad]	looking for what looking for -	Incorrect word stress	2
I didn't	[ˈdInt]	I went (2) -	Incorrect elision of 'did not'	3
the very day	[ˈvɛrI de]	the lady - (2)	Incorrect rhythm	3

(H1 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occurrences
to secondary school	[sɛ'kandrI]	this kind of school(3) this country school(5)	Incorrect word stress	8
in order to meet	[n odə tu'mi:t]	I would meet (2) there to meet where I had to meet	Incorrect rhythm	4
I preferred	['prI'fə:]	I would find that I've been finding that -	Incorrect word stress	3
junior part	['dʒunjə 'pat]	generally right that part - at	/a:/ > [a] in 'part'	3
to labour	['leβə]	to live up to - (6) to live off to fight to learn	/b/ > [β], heard as [v]	10
fagging system	-	- system (3) filing system	Unfamiliar lexis	4
hockey players	[ɔkI 'pleəs]	- (2) hundred	Incorrect rhythm	3
in football	[fut'bol]	- (2) enough	Incorrect word stress	3
to keep for my House	-	to kick for my House (3) - to play for my House (3)	Incorrect lexis (= to be goalkeeper)	7
Red Cross Society	['rɛd krɔs so'saitI]	- (2)	Incorrect rhythm	2

(H1 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
Historical Society	[hI'stərkl]	a circle society a - society (4) - (5)	/ɒ/ > [ə]	10
Scouts Movement	['skaus]	- (2)	Final /ts/ > [s]	2
first of all	['pəs v 'ol]	as it was that was all after	/f/ > [p] in 'first'	3
was participating	[pa'tIspetiŋ]	was speaking - (3) was after	Incorrect elision	5
was rendering	['rɛndə'riŋ]	- (2) was going to was doing	Incorrect word stress	4
a sort of humanitarian service	['savIs]	as of humanitarian as of a sort of - - a humanitarian to a humanitarian -	/3:/ > [a]	5
doing such job	-	doing this sort of thing -	Incorrect syntax	2

H2

for example, if....	[fɔ I'zɑ:mpl'If]	but I don't believe -	Incorrect rhythm	2
if I had a wife	['hjɛd]	if I get a wife (5) if I take a wife	/æ/ > [ɛ] + palatalisation	6

(H2 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occurrences
one of the ways	[ˈðwes]	one of those - (4) - one of these	Incorrect elision of 'the ways'	6
that wife	[ðætʰˈwaif]	- (4)	/t/ > [tʰ]	4
might have been wooed	[mait həv 'bin/ 'wud]	- wooed by me might take a -	Incorrect phrasing 'might have been/wooed'	3
tight friends	-	tactful different - (3) great friends - friends	Unfamiliar lexis (= close friends)	7
regard	[rIˈgad]	you got get of that -	/a:/ > [a]	4
in such a way	[ˈsatʃ ə we]	- beside - beside I were in spite of that	Incorrect rhythm	4
usually	[juˈʒəlI]	you - you generally - (3) even when	Incorrect word stress	6
reached a time	[ˈritʃt]	lived a time (3)	/i:/ > [i]	3
for a wife	[ˈwai]	for a - -	Elision of final /f/	2

(H2 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occurrences
the changes	[ˈtʃendʒɪs]	the - (3) the tendency -. (5)	/eI/ > [e]	9
are occurring	[ɑ:ˈkə:riŋ]	are carried - (6) are coming	Incorrect elision of first syllable of 'occurring'	8
when I gave	[ˈgev]	which idea (2) which are a girl	/eI/ > [e]	3
this tradition is occurring very greatly	-	this tradition is - very greatly (3)	Incorrect syntax	3
there would be unrest	[anˈrɛəst]	they would be angered there would be - (3) there would be angers (2)	/e/ > [ɛə]	6
instead of tightening	[ˈtaitiŋ]	instead of touching (2) - touching instance of tightening -	Incorrect elision of medial syllable of 'tightening'	5
as far as I am concerned	[jɪz ˈfa əz aim ˈkɔnˈsə:nd]	the - concerned (2) the person concerned if the person concerned	Incorrect rhythm	4
I can understand her manners	[ai kɤn ˈandəstən]	- and her manners - her manners (4) if you understand her manners	Incorrect rhythm	6

(H2 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
by talking to her	[ˈtoukiŋ]	- but look at her taking her out to quicken her - her - are	/ɔ:/ > [ou]	6
provocative	[proˈvɛkItIv]	prohibitive (2)	/ɒ/ > [ɛ]	2

H3

I heard	[ˈhad]	I had (4)	/ɜ:/ > [a]	4
even no time was allowed	[ivən nəu ˈtaim wɔz əˈlaud]	even though - - sometime even - even meal times - even though time was allowed	Incorrect rhythm	5
to eat food	[tʊ ˈi:t fʊd]	to eat (2) - food	Incorrect rhythm	3
on so so and so so books	-	in some books on - books - in books in some special books	Incorrect syntax	4
cinemas	-	- (2)	Incorrect lexis in the context (= films)	2
we are given as much	[wiə ˈgivIn]	by giving as much -(2) we don't have as much	/ə/ > [I]	4

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
the best way	[ˈbɛst we]	- (2)	Incorrect rhythm	2
since	[ˈsəns]	- so so that	/I/ > [ə]	3
basic aim	[ˈem]	basic - (4)	/eI/ > [e]	4

H4

I must mention	[ˈmɛʃə n]	- some information (4) give a narration - explanation answer information	/nʃ/ > [ʃ]	8
modern education	[ˈmodən]	more education (2) - - education (2) more of education	/ɒ/ > [o]	6
only an Islamic education	[Isˈlɹʔ ɛdjuˈkeʃn]	only slight education only this - education only English Lang. education - education only - education	Elision of final syllable of 'Islamic'	5
I still can remember his name	[ai stIl/kɹ rIˈmɛmbə hIs ˈnem]	I still - remember my feeling I stood - -	Incorrect phrasing	3
we didn't begin	[wI dn bIˈgIn]	we - given we begin - we -	Incorrect elision of of 'did not'	4

(H4 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
with him	[wIθ 'hi:m]	it seem (2) -	/I/ > [i:]	3
at some boys' papers	['bɔis 'pepəs]	- at - papers at some others' papers at those papers at some of those papers at somebody's papers over peoples' shoulders(2) at my worst efforts	/ɔI/ > [ə i]	8
to solve my own arithmetic	[tʊ 'sɔlv mai/ mai 'ɔn/ ə'rIθmɛtIk]	- arithmetic (2) know that sum - arithmetic that - arithmetic somewhere I was - someone - arithmetic I know - about arithmetic	Incorrect phrasing	7
I was born there	['bɔn]	I was bored there I was - there	/ɔ:/ > [ɔ]	2
at that time	['tai]	and that day at that - (2)	Elision of final /m/	3
it wasn't	['wɔzən]	I went to it was I was	Incorrect elision of 'was not'	3
middle school	['mIdI]	- school (2) mixed school (4) mid school (3)	Final syllabic /l/ > [I]	9
I was born	['bɔn]	I was - (2)	/ɔ:/ > [ɔ]	2

(H4 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occurrences
a sort of natural phenomenon	[ˈnɛtʃər fɪˈnɔmɪnən]	a sort of - I felt a - I sort of - -	Elision of final syllable of 'natural'	4

H5

traditional ways	[ˈtraˈdiʃnu]	- there are two ways (2)	Incorrect word stress	3
for to select their own wives	-	- on their young wives to select the women for their wives	Incorrect syntax	2
recent	[ˈriːzənt]	reasons (3)	/s/ > [z]	3
wants to choose	[ˈwanz]	was to choose were to choose	/ɒ/ > [a]	2
to apply	[ˈaˈplai]	to comply (2)	Incorrect word stress	2
come and solve	[kʌˈmənd/ˈsov]	command come and do come and sort out	Incorrect phrasing	3
money is	[ˈməni]	menace is many things many - many of these many is many instances - is	/ʌ/ > [ə]	7
how she appears to me	[hau ˈʃi əˌpɪəz]	- (4)	Incorrect rhythm	4

(H5 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occurrences
I first of all study	['stədI]	- (2) I first of all think I first of all would consider I first of all said I first of all see (2) I consider I first of all -	/ʌ/ > [ə]	9
I will fall in for her	-	I will - (2) I am falling in love for - (2) I have fallen for her I falling for her	Incorrect syntax (= fall in love with her)	7
how I hope	[hau /ai 'houp]	how I have - I hope (2) our I hope	Incorrect phrasing	4
I don't mind	['main]	I don't know ə —	/nd/ > [n]	2
little or nothing	['litəl 'ə: 'nʌθIn]	literally nothing (2) literally or nothing	Incorrect rhythm	3

H6

because	[bI'koz]	of course (2)	/ɒ/ > [o]	2
who can speak	['hwʊ]	which does speak who just speak (2) which I speak	/h/ > [hw]	4
I want to take part	['wənt]	I - take part (2) I take part	/ɒ/ > [ə]	3
hostel arrangement	[hɔ'stɛl]	such an arrangement the arrangement - arranging	Incorrect word stress	3

(H6 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
the University	[ðI 'junIvə:sI]	Lagos my invoice -	Incorrect word stress	3

H7

it happens because	['hjɛpəs]	it was - because (5) it was difficult because it helped because it was therefore because	Final /nz/ > [s]	8
he realised the value	[rɛa'laiðð i 'vælju]	he didn't like the idea he really had the - he realised that - - (2)	Incorrect assimilation of /d/ + /ð/	5
boys to school	['bɔis]	- school (2) us to school (2) us to go to school both to school (2)	Final /z/ > [s]	7
and what would be the outcome	[n əwɔt wd bI ðI 'autkʌm]	- the outcome not - come - (7) in order for the outcome	Rhythmic compression	10
we were taken	['wa]	- had taken (2) - taken - (6) I was taken	/3:/ > [a] in 'were'	10
what is usually done	['ju'ʒvəlI]	what, you see, he really did what is - what is easily done -	Incorrect word stress	4

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
early in the mornings	['alI]	I leave in the mornings -	/3:/ > [a] in 'early'	2
are not sent	['a:r nət 'sɛnt	are sent (4)	Incorrect rhythm	4
parents	['parənt]	fathers (5)	/ɛə/ > [a]	5
come and queue up	['kʌm 'ɛnd kju 'ʌp]	come in the - (3) come in the queue up (2) come in the - up	Incorrect rhythm	6
when we were passing	['hwan wiʔ a 'pasIn]	one - - (8) - person	Rhythmic compression	10
they shout on us	. -	- us - (8)	Incorrect syntax	9
Christians	['krIsjIənz]	- (8)	/stʃ/ > [sj]	8
you are diverting our religion	-	- (7) - at a religion - religion (2)	Incorrect lexis	10
come back	['kʌm bɹʔ]	convent - (8)	Incorrect rhythm	9
primary school	[prai'mari]	- school (2) family school	Incorrect word stress	3
close to our place	['klos tʊ 'a/ 'ples]	- please across to - - our place	Incorrect phrasing	3

(H7 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
what is usually done	[hwət Is ju'ʒʊəlI dən]	I noticed it usually then and all this is duly done and all that is done - day all we usually done - I notice early I notice during the day I notice -	Incorrect rhythm	8
threepence	['θərpəns]	- (4) the campus the - (5)	Metathesis of first syllable	10
three hours of writing	[θri 'az/ɔv 'raitIn]	- writing a few hours of writing to clean our writing - of writing	Incorrect phrasing	4
on the ground	['graun]	on the - (2)	Final /nd/ ≻ [n]	2
the master	['masə]	though most of - (2) the most - (3) they must	/a:/ > [a]	7
forefinger	['fɔ:'pIŋgə]	- (7)	/f/ ≻ [p]	7
teaching us	['ti:'tʃIn '?ʌs]	each of us (2) which is	Incorrect rhythm	3
the first impression	[ðI fəs im'preʃin]	the impression (4) - impression (2) - us impression	Incorrect rhythm	7

(H7 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
government college	[ˈgʌvənt]	- (5) - of town called go into government school of - called	Incorrect elision of medial syllable of 'government'	10
hostel	[ˈhɔˈstɛl]	able -	Incorrect word stress	2
I'm not used to	[aim nɔˈtʃust tə]	I would choose to I visited - not too - I choose to I not - I got used to	Assimilation of 'not used' > [tʃ] + strong aspiration	7
lot of	[ˈlət]	little of - of - off island of	/ɒ/ > [ə]	4
having to dine	[ˈhɛvɪʔ tʊ ˈdain]	- (2) even to dine (2) - to dine ever to deal mean to dine eleven to -	/æ/ > [ɛ] in 'having'	10
properly	[ˈprɔˈpali]	all my meal my pie for - for a while -	Incorrect word stress	5

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occurrences
choosing a wife	[ˈtʃyzɪʔəwaif]	-(3)	Rhythmic compression	3
will go and approach the (girl)	[əˈproʊð ðɪ]	were - - will go and - will go up to (2)	Incorrect assimilation of 'approach the'	8
they start	[ˈstət]	- (6)	/ɑ:/ > [ə]	6
inform you	[Inˈfɔm]	phone you for you -	/ɔ:/ > [ɔ]	3
pay regular visits	[ˈpe]	parents - (2)	/eI/ > [e]	2
which are occurring	[ɔˈkariŋ]	- our curries - (2)	/ɜ:/ > [a]	3
may choose the (wife)	[ˈtʃu:ð ðɪ]	meet - (2) - (3) make the choice (2) meet you - (2) - choose	Incorrect assimilation of 'choose the'	10
have to say	[ˈse]	have to see (2) have - know if	/eI/ > [e]	4
seek	[ˈsi:ʔ]	see (9)	Elision of final /k/	9
for her	[fo ˈha]	father - (5)	/ɜ:/ > [a]	6
for beauty only	[foˈbju:tɪɔnlɪ]	for - for future for a future for a -	Rhythmic compression	5

(H8 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
character	['kɛrɛktə]	- (2)	/æ/ > [ɛ]	2
our own society	['ɔn]	I also - (2)	/əʊ/ > [ɔ]	2
developing	[dI'vɛlofin]	- (2)	/p/ > [f]	2
my wife have (to entertain)	-	might have I might have (2) I may have	Incorrect syntax	4
if she can't speak English	['kan]	if she can speak English(4)	/ɑ:/ > [a]	4
she'll not be able	['ʃi nət]	she might be able (4) she may be able she will be able	Incorrect elision of 'will not'	6
a graduate	['grɛdjʊɛt]	a - (2)	/æ/ > [ɛ]	2
be loyal to me	['bIləjəl tʊ'mi:]	be wanting be - (3) - be worth it - loyalty be hurting be royalty	Incorrect rhythm	9
school certificate	['skul 'sə:tIfkɛt]	- these are less educated the - - certificate	Incorrect rhythm	4
the type of wife I	['taip v waiv ai 'wənt]	- (3) the paper work I want	Incorrect rhythm	4

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
I thought	[ˈθɘt]	I felt (4) futile	/ɔ:/ > [ɘ]	5
it's a great task for one	[ˈglet]	it's only - you are good for one	/gr/ > [gl]	2
the world in general	[ˈwɘld]	- at general all in general or at least (3) life in general (2) - in general -	/ɜ:/ > [ɘ]	10
more than those	[ˈmoðɘn/ ˈðous]	more than - (3) - modern - - those	Incorrect phrasing	6
down in category	[keˈtagɘrI]	done in the category done in - (5) done in collaboration done - done in connection down -	Incorrect word stress	10
immediately	[ˈmi:djɛtlI]	in - - (5)	Incorrect elision	6
if at all one is determined	[If æˈtɔlwɛ̃ Is dIˈtɘ:mIn]	if at home is the time (2) if I don't know it's the time if at always the time if at - is determined if - one has the time if only one has the time - time if at - is the time	Rhythmic compression	9

(H9 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
the work	[ˈðwəkʼ]	- (2) that (2) out it (2).	Incorrect elision	9
a bit normal	-	a bit - (2) a bit more	Incorrect lexis	3
if at all	[Ifɔːˈtəl]	if I told (6)	Rhythmic compression	6
one is prepared	[ˈwɛ̃Is]	I was prepared (3) - is prepared - (2) a - is prepared	Rhythmic compression	6
join societies	[ˈdʒəin]	use societies - societies adjourn societies	/ɔI/ > [əi] in 'join'	3
sports clubs	[ˈspos ˈklʌz]	I suppose - (6) - class	Final /ts/ > [s] in 'sports'	8
etc.	[ˈi:ti:si:]	it's easy (8) - O.T.C.	Incorrect lexis i.e. mispronunciation of abbreviation	10
I take part	[ˈpat]	I think that I take that	/ɑ:/ > [a]	2
co-operation	[kɔpəˈreʃn]	complacent (2)	Incorrect elision	2
anything can be done tangible about it	-	- tangible about it anything can be tangible about it anything can be tangible without it	Incorrect syntax	5

(H9 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occurrences
(cont.)		anything can be done without it anything can be done about		
their own considerations	['ɔn]	there are all considerations their - considerations	/əʊ/ > [ɔ]	2
in the growing population	['groun]	of the population in the - population(2) -	Incorrect elision	5
world	['wəld]	- (4) isle	/ɜ:/ > [ə]	5

H10

compelled	['kɔm'pɛld]	concerned (2) - (2)	Incorrect word stress	4
district head	-	district hut district -	Unfamiliar lexis	2
his people	['pjIpəl]	the pupils his pupils his pupil	/i:/ > [I] + palatisation	3
boys were being playing about	-	boys had been playing about (4) boys would be playing about (2) boys were being played about	Incorrect syntax	7
large modern building	['bIldIn]	large modern -	Final /ŋ/ > [n]	2

(H10 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
expatriates	[ɛks'patIri:ts]	specialists - (3)	/tr/ > [tIr]	4
I prefer	['frI'fə:r]	and from these (2)	Initial /p/ > [f]	2
grounds	['granz]	grass (7)	/aʊ/ > [a]	7
compound	-	compost cow-paths car parks	Unfamiliar lexis (= grounds, garden)	3
farm	['fam]	fun - (2) front veldt	/ɑ:/ > [a]	7
in sports	['spos]	I suppose (3) at first -	Final /ts/ > [s]	5

H11

a traditional way	['tra'diʃal]	the usual way - way (2) -	Incorrect elision	4
family	['fəmlI]	friendly -	/ɤ/ > [ə]	2
go and get in contact	[goun gɛt 'kɔntɤk]	- (2)	Rhythmic compression	2
you love that girl	['lə?]	you don't like that girl they know that girl - that girl (3) you know that girl	/ʌ/ > [ə]	6

(H11 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
arrangements	[ə'renmənts]	-(3)	Incorrect elision	3
you become married	[jʊ kəm 'mærɪt]	- you come and - you can collect they become married (3) you -	Elision of first syllable of 'become'	7
changes that are occurring	['tʃendʒɪzðə ta ə'kə:rɪn]	- (10)	Rhythmic compression	10
would like	['wu:d]	who'd like (2) -	/ʊ/ > [u:]	3
their sons	['sənz]	their - - (2)	/ʌ/ > [ə]	3
are married	[a]	I married -	/ɑ:/ > [a]	2
to other relative children	-	brother relative children - relative children - (2) to other relative's children and other relative children	Incorrect lexis	6
they p....change an idea	[ðe pə'tʃendʒ ə / an 'aidiə]	they pretend an idea (2) - the idea (2) a change in idea - an idea they - they pretend - they put forward an idea the opportunity of idea	Incorrect phrasing + hesitation	10

(H11 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
much non-related people	-	much further related people much more related people (3) - (2) - related people - people	Incorrect syntax	8
classmate	['klɑsmeit]	- (3)	/ɑ:/ > [ə]	3
somebody like that	[səm'bɔdI laik ðət]	some other girl my little girl - (2) someone -	Incorrect rhythm	5
manners	['mɛnəz]	match menace - (2) men as	/æ/ > [ɛ]	5
beauty	['bju:'ti]	you too - (2)	Incorrect word stress	3
I didn't like the way	['dIn]	I might be it's the way - (2)	Incorrect elision of 'did not'	4
I was brought up	[weð 'brot]	well brought up (2) - (3)	Incorrect variation of place (included under assimilation)	5
there are some things	['siŋz]	some of the weddings - (2) there is some - there are some -	/θ/ > [s]	5

(H11 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occurrences
should not be made	[ʃʊd nɔt 'bi:med]	should not be - (5) -	Incorrect rhythm	6
proper education	['prɔfə]	my qualification proper - from education prevarication	/p/ > [f]	4
I'm given	['gi'vən]	give give them - (8)	Incorrect word stress	10
fortunate to have been	[fɔ'tjʊnət tʊv bI givn]	- (9) for -	Rhythmic compression	10
their due freedom	-	some freedom (3) - the idea of freedom some new freedom (2) more freedom (2) their new freedom	Unusual lexis	10
and those such things	['siŋz]	in these lessons (3) - those lessons all those things	/θ/ > [s] in 'things'	9
the disadvantage	[dIzəd'vəntIʒ]	there's a - there is advantage (2) there - - (4) the advantage	Incorrect word stress in the context; should be on 'dis'	9
A muslim	['mʊslIm]	this way mostly - (3) A Hausa	Unfamiliar lexis pronounced in unfamiliar way	6

(H11 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
to my religion	[rə'lIʒIn]	to marry into to my relation to - to Malaysian	/dʒ/ > [ʒ]	4
to allow my wife	['alau]	other wife to get a wife to - my wife (2) - with my wife	Incorrect word stress	6
go out working	['wakiŋ]	go out to - - (3)	/ɜ:/ > [ə] in 'working'	4

H12

for university students	[fɔ jʊnI'vasi/ 'studənz]	for the students for students	Incorrect phrasing	2
in particular	['patikju'la]	- and university life	Incorrect word stress	2
my main aim	['em]	my - -	/eI/ > [e]	2
for instance	['Istə n]	for listen -	/nst/ > [st]	2
if I were one of them	[If'ai wa 'wʌn v ðəm]	if I had known if well our - - (2)	Incorrect rhythm	4
such high courses	-	such hard courses such higher courses set higher courses	Incorrect lexis	3

(H12 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
amenities available	[a'ʊeləbu]	amenities we know amenities (2) amenities to see amenities I would know -	/v/ > [ʋ]	6
the standard is a bit higher	['s ændəd]	- a bit higher (4) - I found it a bit higher sort of a bit higher it seemed a bit higher the sound of a bit higher	/st/ > [s]	9
sociable	['soʃe'bu]	socially (3) social group	Incorrect word stress	4
a great thing	[ə'θi:ŋ]	a great strain (2)	/I/ > [i:]	2
most of what you do	['mos ɔ/ wɔtjuʃ/ 'du:]	also what you do (3)	Incorrect phrasing	3
mere revision	['mɛə]	mainly revision -	/Iə/ > [ɛə] in 'mere'	2
in that respect	[rə'spɛ]	that is - (4) - in that - and that -	Elision of final /kt/	7
fans	['fanz]	finds forms fires fountains -	/æ/ > [a]	6

(H12 - continued)

Text/Word	Pronunciation of Key Word(s)	Listeners' responses	Likely cause of error	No. of occur-rences
to read even in their rooms	[tʊ ɹid 'ivən n ðɛə 'ru:mz]	to have heat in their rooms to live in their rooms (2) - in their rooms (2) to have women in their rooms leave in their rooms to read in the evenings in their rooms	Incorrect rhythm	9
in comfort there	['kʌmpʰə]	who come over and they come over there comfortably - in their -	/f/ > [p] + aspiration	5

APPENDIX III

Rank order summary of errors in Test III (Phonemes)

(Figures indicate number of listener failures)

Question	Phonemic contrast	Key words	Yoruba speakers	Hausa speakers	Total
43	/z,s/	prize/price	85	64	149
8	/ʌ,ɜ:/	buds/birds	86	50	136
13	/ɔ:,ɒ/	short/shot	87	44	131
21	/əʊ,ɔ:/	bowl/ball	49	76	125
42	/g,k/	bag/back	54	70	124
5	/ɒ,ɔ:/	cock/cork	61	53	114
15	/ɜ:,ɒ/	hurt/hot	91	21	112
6	/ʊ,u:/	pull/pool	58	49	107
2	/e, æ/	men/man	48	54	102
40	/p,b/	robe/rope	46	56	102
9	/aIə,aI/	tired/tied	54	44	98
7	/ʌ,ɒ/	bus/boss	83	12	95
10	/i:,I/	sheep/ship	62	32	94
3	/æ,ɑ:/	cat/cart	81	3	84
23	/Iə,ɛə/	here/hair	55	23	78
29	/ð,d/	southern/sudden	46	32	78
12	/ɑ:,æ/	part/pat	48	27	75
16	/ɜ:,ɔ:/	first/forced	54	21	75
39	/ŋ,n/	rang /ran	44	29	73
37	/dʒ,ʒ/	ledger/leisure	29	43	72
1	/I,i:/	hit/heat	40	31	71
14	/ɜ:,ɑ:/	first/fast	8	63	71
38	/ŋ,n/	taking/taken	35	32	67
48	/k,kw/	cod/quad	16	39	55
41	/d,t/	hid/hit	17	27	44
26	/tʃ,ʃ/	watching/washing	31	9	40
33	/z,s/	zinc/sink	22	17	39
11	/u:,ʊ/	fool/full	17	20	37
30	/ð,z/	teething/teasing	33	1	34
27	/θ,t/	thought/taught	32	1	33
32	/v,b/	vote/boat	18	13	31
24	/ɛə,Iə/	rare/rear	24	3	27
18	/aI,eI/	rice/race	15	5	20
47	/kt,k/	walked/walk	17	-	17
44	/skt,kst/	asked/axed	13	3	16
4	/æ,ʌ/	bag/bug	13	1	14
17	/eI,e/	paper/pepper	8	5	13
22	/aʊ,əʊ/	town /tone	8	4	12
45	/kst,st/	next/nest	2	10	12
35	/r,l/	ram/lamb	4	7	11
28	/θ,s/	thinking/sinking	7	-	7
34	/ʃ,s/	shore/sore	3	4	7
25	/jʊə,ʊə/	pure/poor	4	2	6
36	/f,p/	fin/pin	1	5	6
20	/əʊ,ɒ/	coat/cot	2	-	2
31	/v,f/	van/fan	2	-	2
19	/ɔI,aI/	toys/ties	1	-	1
46	/z,Ø/	girls/girl	-	-	-

APPENDIX IV

Rank order summary of errors in Tests IVA and IVB (Stress and Intonation)

(Figures indicate number of listener failures)

Question		Yoruba speakers	Hausa speakers	Total
2	SURvey	80	53	133
6	transPORT	61	30	91
4	CONtrast	41	43	84
3	obJECT	49	28	77
5	PROgress	46	22	68
1	reCORD	32	26	58
16	No, it's Wednesday, March 7th	106	104	210
8	No, John motored to London	109	97	206
12	No, the green book is on the floor	107	99	206
19	No, it's 1968	106	97	203
9	No, John motored to London	105	89	194
10	No, the green book is on the floor	83	92	175
15	No, Ghana is in West Africa	81	92	173
21	No, it's 1968	103	68	171
18	No, it's Wednesday, March 7th	82	87	169
14	No, Ghana is in West Africa	76	90	166
20	No, it's 1968	80	83	163
17	No, it's Wednesday, March 7th	75	81	156
13	No, Ghana is in West Africa	61	59	120
11	No, the green book is on the floor	44	57	101
7	No, John motored to London	32	47	79

IVB

33	No, he isn't, is he? (full agreement)	117	113	230
32	Yes, he is, isn't he? (full agreement)	86	65	151
26.	Would you like orange or lime or lemon? (complete)	87	54	141
27	Would you like orange or lime or lemon? (incomplete)	50	52	102
31	Are you going to see him tonight? (surprised)	41	50	91
29	She's very pretty (doubtful)	42	41	83
30	Are you going to see him tonight? (matter of fact)	44	35	79
25	What are you going to do? (surprised)	33	31	64
24	What are you going to do? (matter of fact)	32	31	63
28	She's very pretty (positive)	38	22	60
23	I'm going home tomorrow? (question)	29	28	57
22	I'm going home tomorrow (statement)	12	7	19

APPENDIX V

Allocation of listeners to speakers

	1	2	3	4	5	6	7	8	9	10
Y1	L1	L2	L3	L4	L214	L215	L216	L217	L218	L219
Y2	L11	L12	L13	L14	L15	L16	L17	L18	L190	L237
Y3	L30	L31	L32	L33	L34	L35	L36	L143	L144	L145
Y4	L41	L42	L43	L44	L45	L135	L136	L137	L138	L139
Y5	L83	L84	L85	L86	L87	L88	L89	L90	L91	L92
Y6	L93	L94	L95	L96	L97	L98	L99	L100	L220	L221
Y7	L161	L162	L163	L164	L165	L166	L171	L172	L173	L174
Y8	L133	L134	L155	L156	L157	L232	L233	L234	L235	L236
Y9	L127	L128	L129	L130	L208	L209	L210	L211	L212	L213
Y10	L106	L107	L108	L109	L175	L176	L177	L178	L179	L180
Y11	L101	L102	L103	L104	L105	L227	L228	L229	L230	L231
Y12	L76	L77	L78	L79	L80	L81	L82	L238	L239	L240
H1	L5	L6	L7	L8	L9	L10	L191	L182	L183	L184
H2	L19	L20	L21	L37	L38	L39	L40	L140	L141	L142
H3	L22	L23	L24	L25	L26	L27	L28	L29	L131	L132
H4	L70	L71	L72	L73	L74	L75	L146	L147	L148	L149
H5	L60	L61	L62	L63	L64	L65	L66	L67	L68	L69
H6	L110	L111	L112	L113	L114	L115	L116	L117	L118	L119
H7	L120	L121	L122	L123	L124	L125	L126	L152	L153	L154
H8	L150	L151	L158	L159	L160	L222	L223	L224	L225	L226
H9	L46	L47	L48	L49	L50	L185	L186	L187	L188	L189
H10	L167	L168	L169	L170	L197	L198	L199	L200	L201	L202
H11	L55	L56	L57	L58	L59	L203	L204	L205	L206	L207
H12	L51	L52	L53	L54	L191	L192	L193	L194	L195	L196

Y1 - 12 = Yoruba speakers' numbers

H1 - 12 = Hausa speakers' numbers

L1 - 240 = Listeners' numbers